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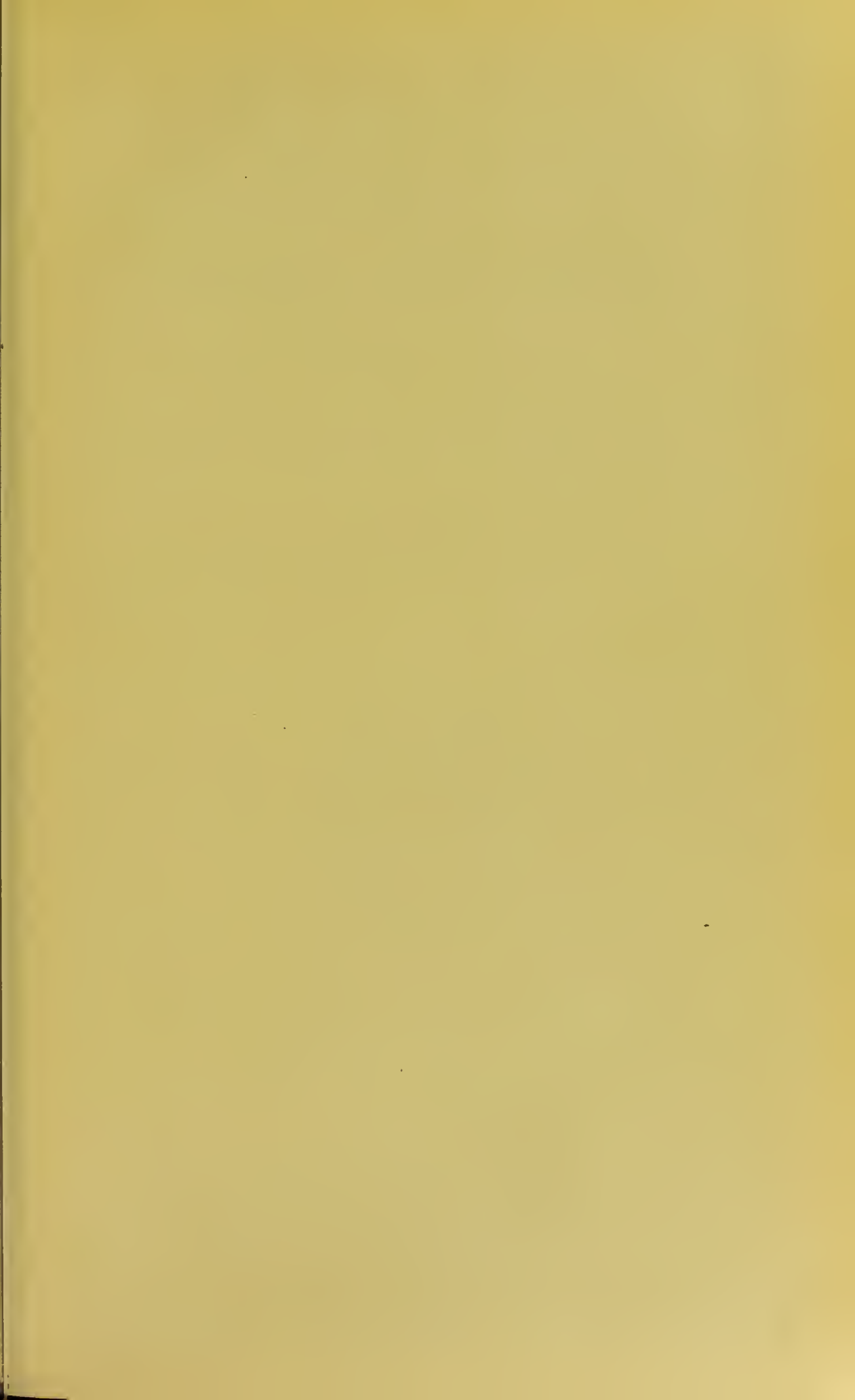
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1 of 3 vols.



SECOND
INTERNATIONAL CONGRESS
ON
SCHOOL HYGIENE.

LONDON, 1907.

PATRON :
HIS MOST GRACIOUS MAJESTY THE KING.

TRANSACTIONS—VOL. III.



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SECOND
INTERNATIONAL CONGRESS
ON
SCHOOL HYGIENE.

SECTION III.

THE HYGIENE OF THE TEACHING PROFESSION.
HYGIÈNE DU CORPS ENSEIGNANT.
HYGIENE DES LEHRBERUFES.

President.

T. J. MACNAMARA, LL.D., M.P.

Secretaries.

ALICE JOHNSON, F.R.C.S.I., D.P.H. (Camb.), London.

MARSHALL JACKMAN, London.

ADDRESS BY DR. MACNAMARA, M.P., *President of the Section.*

It is, of course, a trite reflection that upon the teacher's health depends to an enormous extent the success of his teaching. If he is in good health and spirits his teaching is the more likely to be bright and effective; if he is run down, dyspeptic, or in poor health generally, he can scarcely be expected to teach pleasantly and with freshness. Neither will his pupils be alert and receptive, because, to a remarkable extent, children catch their tone from their teachers.

Therefore, in the first place, it is essential that schoolrooms should be so designed, warmed and ventilated as to give the teacher a chance of keeping fit. And in this connection I would remark that even to-day there are school premises so entirely unsuitable that they would—as a result of their defective warming, lighting and ventilating arrangements, and also of over crowding—steadily undermine the most robust constitution. Many can only be ventilated by throwing open the windows. This is all right in summer; but in winter the inevitable choice lies between slow asphyxiation and certain influenza. Then, again, many schools have been built right out on the line of frontage of noisy thoroughfares. The consequence is that one by one the teachers break down with the most

serious laryngeal complaints. Take the Waterloo Road Council Schools in South London. To teach in any one of its classrooms abutting the main road is to put the human voice all day long in hopeless competition with the incessant and relentless uproar of rumbling drays, rattling omnibuses, jangling trams and groaning motor-buses. In a number of cases municipal councils have sought to mitigate the difficulty by laying down wood-pavement. I wish I could prevail upon them all to adopt this admirable course.

And whilst I am dealing with the teacher's voice—upon which so very much depends—let me implore my fellow-teachers to believe me when I say that they can be most impressive when they speak most softly. Nearly all our preachers and teachers and most of our actors seem to have the idea that they really cannot be very much in earnest unless they talk very loudly. That is where they are quite wrong. To be really impressive one should speak softly. Further, I would urge upon teachers to cultivate the science and art of voice-production. A properly trained speaker, not endowed with a particularly powerful voice, can address an open-air meeting of five thousand people for half an hour and show no signs of distress at the close; whilst an untrained speaker, with the voice of a Boanerges, will croak like a very hoarse raven before half his task is over.

Leaving the voice, let me urge upon teachers to make the due ventilation of the classrooms a regular part of the day's routine. The air should be changed at the middle of each session just as regularly as the registers are marked at the opening. Recent medical science has proved beyond doubt that the teacher's scourge—consumption—is highly infectious. Given a teacher in poor health, and therefore unable to fight the phthisis germ; leave the windows shut all day and let the room get "stuffy," and the mischief is done. In the interests of both teachers and pupils, lessons should be given in the open air, as far as possible, during the summer months. Why not take the class out to the shady side of the playground, or in some quiet quadrangle? It is long established custom in this as in other matters that causes us to do so much of our work indoors at this time of the year.

Finally, in dealing with the schoolroom, let me lay emphasis upon the need to make such provision as will enable the teacher, and particularly the woman teacher, to sit down from time to time. For a woman-teacher to stand all day long before a class is physical torture; she ought to be able to give alternate lessons sitting down. Further, the teacher's seat and desk should always be raised above the level of the floor; it is physically far easier to teach from a raised platform than from the level of the pupils.

And now let me turn to the question of the teacher's own care of his health. Teaching is, perhaps, the most anxious, monotonous, and nerve-wearing work that I know of. Hence the teacher should watch his physical condition almost as sedulously as a great singer has to do. In the first place, he should, unless absolutely imperative—and I know from personal experience it is often imperative—resolutely decline to take his work home with him at night. By the time the actual day's teaching is over the teacher needs rest and a change of atmosphere. The man who marks papers every night stands a promising chance of coming upon the Invalid Pension Fund at a comparatively early age; whilst the man who occupies a couple of hours pottering about his garden, or who goes out

on his bicycle, or who plays tennis, or cricket, or golf, for a spell after school, when the season permits, may look to be hale and hearty even at threescore years and ten.

For myself, I am a confirmed advocate of athletics in due moderation; and though I admit that gardening, cricket, and tennis are all admirable, I can think of nothing better for teachers than the royal and ancient game of golf. I have literally lured hundreds of my teaching colleagues on to the tee-ing ground, and they one and all rise up and call me blessed. It offers an easy and ambling means of recreation in the freshest of air and over the greenest of sward; and whilst it is so exacting as to impose the most complete mental preoccupation—even to the exclusion of examination papers and class-lists—it does not in the least involve anything in the nature of physical exhaustion. Somebody once advised rural incumbents to keep bees; I would urge teachers, men and women, seriously to take up a physical hobby, and, for preference, to let that hobby be golf.

In conclusion, let me say a word about school holidays. Constant complaint is made by worried parents concerning the length of school holidays. Well, as a parent of four myself, I cannot but express some amount of sympathy with the parental point of view. But as an old teacher I know how vitally important those holidays are if the heart is to be kept young, the spirit fresh, and the body healthy and vigorous. And I would beg of "paterfamilias" who annually swells the harvest of journalistic autumn leaves to remember that the old tag "All work and no play makes Jack a dull boy" is at least equally applicable to Jack's schoolmaster as to Jack himself. Let me add a word of advice to teachers as to the use and abuse of holidays. I would say—go gently during the first few days of a holiday until the body becomes adapted to the new physical conditions, for I have known many a holiday rendered useless, and even worse, by the eager and ardent determination to do big things from the very beginning. I would also, whilst a devoted lover of the beauties of the home land, strongly advocate foreign travel for the teacher. There is so much that is new and fresh and arresting in the habits and customs of foreign lands, as well as in the scenery, that a holiday abroad is worth more than half a dozen at home to the teacher. Indeed I often deplore the fact that our English educational authorities do not adopt the method of the States, and of several European countries, and give their teachers long leave every few years in order that they may travel abroad.

DIE HYGIENE DES LEHRBERUFES.

VON RUDOLF WERNBACHER, Irtdning, Steiermark.

LEHRER, Schüler, Schule: diese drei Einzelbegriffe sollen sich zu einem harmonischen Ganzen ergänzen, deren Wohl und Wehe im Verhältnisse von Ursache und Wirkung zu einander stehen.

Wie viel wurde schon über Schüler und Schule gesprochen und geschrieben, wie wenig drang über Hygiene des Lehrstandes in die

Oeffentlichkeit. Einmal muss es doch gesagt werden, dass es im Punkte "Schulhygiene" keine Bevorzugung geben kann und darf, denn eine besondere Hervorhebung des einen Einzelbegriffes würde naturgemäss eine Rückstellung des andern erfordern.

Ich will daher auch nicht eine Bevorzugung des Lehrberufes im Allgemeinen betonen, sondern will nur das eine erwähnen, dass, wenn der Lehrstand krankt, die beiden anderen, "Schüler und Schule," sich nicht zu einem harmonischen Gebilde entwickeln können.

Darum gilt gerade auch auf diesem Gebiete der Ausspruch: "Was dem einem zu Gute kommt, frommt auch dem andern." Nur ein körperlich und geistig gesunder, materiell unabhängiger, auf der ihm gebührenden gesellschaftlichen Stufe stehender Lehrstand kann auch seiner höheren idealen Aufgabe gerecht werden und sein Möglichstes tun und schaffen, die ihm anvertraute Jugend zu sittlich vollkommenen Wesen zu erziehen.

Ich betone nochmals: *ein gesunder Lehrstand*. Es ist ja wahr, es soll kein Jüngling, der nicht vollkommen gesund ist, den Lehrberuf ergreifen. Aber diese gesetzliche Massregel genügt nicht.

Was dann, wenn sich der Lehrer den Keim der Krankheit durch die Verhältnisse unter denen er seinen Beruf ausüben muss, zuzieht?

Wer soll hier zur Verantwortung gezogen werden?

Welehe Krankheiten sind es, denen der Lehrberuf besonders unterworfen ist und welehe Mittel stehen zur Verfügung, um diese Krankheiten zu verhüten oder zu heilen? Auf einer Versammlung deutscher Naturforscher und Aerzte hat Geheimer Sanitätsrat Wiehmann-Harzburg auf Grund von Fragebogen folgendes konstatiert:

Von 205 Lehrern waren 46, von 782 Lehrerinnen 200 gesund, mithin der grösste Teil krank. Ist dies nicht eine erschreckende Zahl, die geradezu zum Nachdenken, zur Hilfe herausfordert?

Die erkrankten Lehrkräfte wiesen auf: Organische Herzleiden, Lungenleiden, Erkrankungen des Magens, der Gedärme, der Nase, des Rachens, der Ohren, Infektions- und Nervenkrankheiten, Bleichsucht, besonders aber litten sie an Kopfdruck, Herzklopfen, Angstzuständen und Zwangsgedanken. Diese zum Schlusse erwähnten Krankheitserscheinungen sagen uns, wie ausserordentlich gross die Zahl der Erkrankungen, insbesondere nervöser Art, unter dem Lehrberufe vertreten ist.

Ist es daher nicht im höchsten Grade dringend geboten die Berufskrankheiten des Lehrstandes einem genauen Studium zu unterziehen und Abhilfe zu schaffen?

Wer soll jedoch Abhilfe schaffen? In erster Linie gewiss der Staat, die Behörde, der Schulerhalter in deren Diensten der Lehrer steht und die ihm jene Aufgaben zuweisen, die er zu lösen hat.

Aber nicht nur Aerzte, sondern auch Männer aus dem Lehrberufe sollen dieser vom Staate einzusetzenden Studienkommission angehören, denn letztere könnten aus Erfahrung sprechen, während die ersteren den Ursachen dieser Krankheiten eingehender nachgehen könnten, da ihnen ja der Entstehungskeim und das Fortschreiten bis in die einzelsten Teile geschildert werden könnte.

Da würde man finden, dass ausser den seelischen Zuständen auch die Nahrungssorge, der Erhaltungstrieb, eine gar wichtige Rolle im persönlichen Leben des Lehrstandes spielt, dass es unbedingt notwendig ist, einen im materieller Beziehung unabhängigen Lehrstand zu schaffen.

Diese Forderung ist mehr als eine blosse Standesfrage, sie ist eine Ehrenschuld der Nation.

In weiteren ist für hygienisch geeignete Unterrichts- und Wohnungslokale Vorsorge zu treffen, ferner soll die Schülerzahl, Lehr- und Stundenplan und die Dienstzeit einer eingehenden Beobachtung in Bezug auf ihre Wirkung auf das seelische und körperliche Wohl des Lehrers unterzogen werden.

Die Ergebnisse dieser Studien sollten jedoch in der Schulgesetzgebung und Schulaufsicht und -Pflege ihre Verwertung und ihren Ausdruck finden.

Ich fasse diese Punkte, um deren *Würdigung* ich Sie namens der Lehrerschaft, in deren Namen ich zu sprechen die Ehre habe, bitte, in dem folgenden Antrage zusammen, um dessen Begutachtung und Annahme ich ersuehe :

In Erwägung der durch die Erfahrung bestätigten Tatsache, dass die Ausübung des Lehrberufes zu den seelisch und körperlich aufreibenden Tätigkeiten zählt und dadurch das Auftreten besonderer Berufskrankheiten besonders begünstigt ;

In weiterer Erwägung, dass diese Berufskrankheiten die Ausübung einer erfolgreichen Betätigung in erzieherischer Hinsicht hemmend entgegenwirken ;

In endlicher Erwägung, dass durch die bisherige Praxis in der Betätigung der Schulgesundheitslehre nur auf das leibliche Wohl der Schulpugend Bedacht genommen, das der Lehrpersonen aber nicht berücksichtigt wird, was auch in der Schulgesetzgebung nicht zum präzisen Ausdrucke gelangt :

Beantragt der Unterfertigte namens des deutsch-österreichischen Lehrerbundes, es seien :

1. Die Berufskrankheiten des Lehrstandes einem genauen Studium zu unterziehen ;
2. Die nötigen statistischen Untersuchungen über die Verbreitung dieser Krankheiten vorzunehmen ; und
3. Vorschläge zu erstatten, durch deren Berücksichtigung seitens der Schulhygiene und Schulgesetzgebung sich eine wirksame Vorbeugung erwarten lässt.

SOME PREVALENT DISEASES INCIDENTAL TO THE PROFESSION OF TEACHING IN ELEMENTARY SCHOOLS.

By WALTER TODDS, London.

THE work of the teacher in these days of wide and searching interest in education is of such a nature that, coupled with the conditions under which that work is prosecuted, it is not surprising to find that the profession as a whole is peculiarly liable to particular illnesses.

The conclusions arrived at have been drawn mainly from the returns issued by the Provident branch of the National Union of Teachers, a branch which has upwards of 18,000 members on its books. These

figures have been reinforced by the recent returns for the Government breakdown allowances. The former extend over a lengthy period, the latter over not more than seven years. The former deal with teachers of all ages, a large number of young teachers having drawn on the funds; the latter deal more especially with teachers of more advanced years, the average age for 1905-6 being fifty-two, and the average years of recorded service twenty-seven.

The figures quoted are those of the two most recent years, since, from a careful examination of many years, the conclusion arrived at is that with one or two notable exceptions, they may be taken as representative years.

The returns of the Provident Society show the same diseases in fairly constant proportions, with the exception of a great increase in influenza and a steady increase in chest complaints during recent years. The former disease has at present a firm hold on the teaching profession, whilst, unfortunately, the after results of influenza tend very strongly to mental troubles, and in a profession already peculiarly susceptible to nervous strain, this is a disquieting result. The number of cases dealt with by the Provident Society in 1905 was 1671, and of these influenza claimed 301, whilst in 1906 there were 473 out of a total of 2166.

As may be anticipated, the cases of throat trouble rank very high. The large classes, and, in many cases, the presence of more than one class in one room—a condition still found in many schools—throw an unnatural strain on the vocal organs. Even where only one class occupies a room, the large number of scholars, taken together with the great amount of oral work done, taxes the speaking voice of the teacher to the utmost. Again, in many town schools the road in which the school is situated has become a great highway of traffic, the roar of which at times completely drowns the voice. In spite of this disability the teaching must go on, and eventually results in throat trouble.

Another common cause of throat trouble is the presence of a great amount of dust which appears to be unavoidable in some schools. The children in many elementary schools are not able to change their shoes on entering the building. Supposing the morning to be wet and the streets muddy, however carefully the entrance mats are used, however thoroughly schools have been swept, a very large amount of dirt is carried about the school and the air becomes charged with dust. This sets up conditions which alone would be extremely adverse to the throats of strong, healthy teachers, and distinctly dangerous to those of less robust constitution.

The total cases among men for 1905 were 151, and for women 170; for 1906, 193 men and 205 women. Singularly enough, in the Government breakdown returns, out of 472 cases for the same years, only five cases were from chronic laryngitis, four of these being women.

The inferences from a comparison of these returns seem to be that teachers become in maturer years either more expert in the art of the production and management of the voice, or leave the profession. The inclusion in training college curricula of a course of lectures on voice production and care of the throat should mitigate the trouble in the earlier stages of professional life.

The returns for the past few years from the Provident Society show a steady increase in chest complaints. This is of serious importance to the profession. The returns do not show separately the figures for tuber-

culosis and bronchitis, but the secretary of the society states that tuberculosis cases especially are increasing in proportion to other diseases. The number of chest cases dealt with by the Provident Society in 1905 amounted to 174, and 220 in 1906, the numbers being fairly evenly distributed between men and women. For the same years, in the Government returns, thirteen cases of complete breakdown were from bronchitis and fourteen from tuberculosis, out of a total of 327 women, whilst among 145 men, four were from bronchitis and eleven from tuberculosis, making a grand total of forty-two out of 472 cases

The most probable cause of the steady growth of chest complaints is the necessity of working in a vitiated atmosphere. The ventilation and air space of elementary schools are still questions requiring much more careful attention. In the poorest schools the air of the classrooms must become charged with exhalations, not only from the breath but also from the clothes of the children. In spite of the care taken to exclude children suffering from infectious diseases, many children must be present in school whilst actually suffering from diseases of a more or less serious nature. The large classes crowded into the rooms quite preclude the possibility of anything like an adequate air supply. The Board of Education require, under their latest regulations for the building of new schools, only an average floor space of ten square feet per child, and cubical air-space of 120 to 140. Last year's regulations allowed a minimum of 80 cubic feet per child. This was taken as the maximum for large numbers of schools, and, of course, is the standard for these schools at the present time. The regulations allowed this to be still further reduced by sanctioning an increase of 15 per cent. on the average attendance. In poor-law day-rooms for children the minimum is 180, in factories 250, in barracks 600. The overcrowding in the schools is thus apparent, and this, together with the insufficient ventilation, renders the condition of the atmosphere, especially in schools in thickly populated districts, a serious menace to health.

Nervous complaints rank very high in the Provident returns, and even higher in the Government breakdown returns. Under the most favourable circumstances teaching entails a severe expenditure of mental force. Modern conditions, and the peculiar nature of the work, tax the nervous energy of the teacher to the utmost. A thorough medical examination on entering the profession, a second on entering the training college, and a third on commencing service with a local authority, should ensure that the teacher, on starting out, is not merely in average health but is perfectly sound, and physically and mentally strong. In spite of these initial safeguards, the mental strain overcomes large numbers, especially women. A dual system of inspectors, government and council, does not always tend to lighten the burden of teachers.

The existence of a multitude of examinations—term examinations, yearly examinations, leaving examinations, Scripture examinations, scholarship examinations—incidental to nearly all elementary schools, all tend to add to the natural mental strain of teaching. Teachers are over-inspected and their work over-examined for the conditions to be favourable to the least possible mental strain compatible with efficiency.

The Provident returns for nervous complaints give 105 men and 182 women—a total of 287, the particular nature of the disease not being specified; this being for the years 1905 and 1906. The Government

breakdown allowances for nervous diseases among women included 50 neurasthenia, 14 nervous prostration, 6 nervous debility, 5 melancholia, 5 lunacy, 7 delusions—a total of 87 out of 327 cases. This, however, does not include 41 cases classified as “debility,” many of which, doubtless, were owing to nervous strain. Among the men, out of 145 cases, 16 neurasthenia, 10 insanity, 6 mental breakdown, 5 nervous debility, 2 delusions—a total of 39, excluding seven cases of general debility. This is a heavy toll for one branch of disease, and speaks plainly of the severe tax of the mental system. The old method of striving for unnatural paper results is doubtless responsible for a large share of this result, and although great strides have been made, much still remains to be done in order that a normal development of the child should allow the teacher to take a less feverish interest in his profession. It is not surprising, after such a total, to find that heart troubles are very numerous, thirty women and twelve men having received the breakdown allowance for the two years in question.

Briefly reviewing the results, neurasthenia and a long train of other nervous diseases seem to stand out as those which teachers have most to fear throughout the whole course of their service. Where mental trouble does not develop, the heart seems next to be most affected. Chest complaints follow closely in point of seriousness, attacking the teacher from the commencement of his career. Teachers would also seem to be very susceptible to influenza, whilst throat trouble does not seem to develop seriously in later life, although it entails much inconvenience and suffering among younger teachers.

It is reassuring to find that the diseases most prevalent among teachers seem easily capable of mitigation. With the march of events are bound to come more effective ventilation, greater unit of air space, smaller classes, and more individual freedom to the teacher in discharging his duties. As a direct consequence the prevalent diseases will be minimised, the general health of the teachers very greatly improved, and the efficiency of the profession enormously increased.

APPENDIX I.—TEACHERS' PROVIDENT SOCIETY.

SUMMARY OF ILLNESSES IN 1905.

		Males.			Females.		
		No. of Claims.	Weeks.	Days.	No. of Claims.	Weeks.	Days.
Influenza	(1)	166	389	0	135	400	3
Nervous complaints	(5)	33	183	2	93	507	2
Throat	(2)	151	343	2	170	479	5
Chest	(3)	93	558	2	81	683	1
Gastric	(6)	40	147	0	42	142	3
Intestinal	(4)	74	281	4	63	268	1
Debility	(7)	25	211	5	26	180	0
Anæmia .. ..	..	—	—	—	20	109	2
Rheumatism .. ..	..	40	101	4	30	72	6
Other complaints	..	221	792	3	168	720	4
		843	3,008	1	828	3,572	6

SUMMARY OF ILLNESSES IN 1906.

		Males.			Females.		
		No. of Claims.	Weeks.	Days.	No. of Claims.	Weeks.	Days.
Influenza	(1)	262	579	3	211	617	2
Nervous complaints	(5)	72	458	6	89	518	4
Throat	(2)	193	451	5	205	509	3
Chest	(3)	95	501	3	125	617	0
Gastric	(6)	41	125	1	63	220	0
Intestinal	(4)	96	351	4	85	416	3
Debility	(7)	32	147	2	42	262	2
Anæmia .. ..	..	—	—	—	19	142	0
Rheumatism .. ..	..	59	215	6	51	150	1
Other complaints	..	215	718	0	211	913	0
		1,065	3,549	2	1,101	4,366	1

APPENDIX II.—BREAKDOWN ALLOWANCES.

TEACHERS IN ELEMENTARY SCHOOLS (SUPERANNUATION ACT) DURING
PERIOD, JAN. 1, 1905—DEC. 31, 1906.

	No. of disablement allowances granted.	Average age at date of Treasury sanction.	Average years of recorded service.
Men	145	53	28
Women	327	51	26

CHIEF CAUSES OF BREAKDOWN.

	Women.	Men.
Nervous Diseases :		
Neurasthenia	50	16
Nervous prostration	14	6
" debility	6	5
Melancholia	5	—
Lunacy	5	10
Delusions	7	2
Debility	41	7
Total	138	46
Heart	30	12
Deafness	22	16
Pulmonary tuberculosis	14	11
Cancer	13	6
Bronchitis	13	4
Laryngitis	4	1

NOTES ABOUT THE TEACHER'S HYGIENE.

By JOSEPH MAZÁNEK, M.D., *the City Schools Physician in Prague.*

(*Abbreviated Report.*)

THE teacher's health is the essential part of the general school hygiene, and it is necessarily desired to rank it permanently in the above category. The literature is poor in proportion compared with the importance of the teacher's hygiene, and it is necessary to make efforts so that it may increase as much as the other stores of knowledge relating to the rules as to sanitary matters as applied to schools.

This is necessary on account of its general importance and as a means of insuring uniformity in the study and work of school hygienics.

The teacher's health and that of his family is endangered in consequence of his profession, and, on the contrary, he himself can be a danger to the children's health.

The master's health may be affected—(1) by overwork, which proceeds from the incorrect division of the instruction as imparted, or by the manner of interpretation practised; (2) by the increased continuation of the mental effort and by his constantly strained attention; (3) by living in a closed, dusty atmosphere and in the vitiated air of the school-rooms; (4) by the danger of catching the infectious diseases which are frequently present in schools.

But the children's health also may be affected by their master, especially as follows:—

1. In case he is dangerously attacked (*a*) by a nervous disorder; (*b*) by an infectious illness of any kind.

2. He may bring some severe contagious disease from his own family.

Nervousness and tuberculosis are ailments by which teachers are often affected. To prevent this it is necessary to divide proportionally the teacher's mental work. This could be done by means of a suitable and proportionate classification of the scholars, by the co-operation of the sanitary experts, as well as by a proper organisation of neighbouring schools as regards the mentally defective or backward children.

In order to be protected from tuberculosis it is necessary to be very careful, and not to accept for training as teachers weak and ailing persons, and the greatest care ought to be taken in purifying the air in the school-rooms by a proper system of ventilation, by cleaning, by heating, and it ought to be a rule that gymnastics and games are amongst the regular exercises of the school children.

In case the teacher's respiratory organs are affected, it is necessary to give him a long holiday and sufficient means for a complete recovery.

It is advisable to introduce into schools a certain rule insuring a continual and safe control over all the contagious diseases, as it is done in Prague by the teachers.

In similar cases where the children's health might be affected by the teacher, it is desirable that an equally radical and sanitary rule, and every care be exercised according to the gravity and danger of the case.

It is very necessary, for health reasons, to settle the question about

the number of the pupils in single forms, and to fix the total that might be controlled by the human voice in order to obtain the desired effect in the schoolroom.

Reporting as to school visits must be carried out in time and filled in the official printed forms, in case of an infectious illness, and the utmost care must be taken to inform immediately about similar illnesses occurring in the school.

The questions of the hygiene of the teachers has naturally been raised in the International Congress, in order that its importance as a part of school hygiene may be properly appreciated.

THE TRAINING OF TEACHERS IN HYGIENE.

By Miss ETHEL ADAIR ROBERTS.

THE Carnegie Dunfermline Trust College of Hygiene and Physical Training does not present many differences from those of other physical training colleges. The objects of the college are avowedly those of the older establishments—to train teachers of gymnastics and other forms of physical exercise, but hygiene instead of being one among a number of other subjects is intended to be the basis of the student's whole life.

At first the hygiene consists chiefly in the practice of living under hygienic conditions. Reform in the young woman's dress is ensured in the outfit. When she is quite new, and perhaps a little frightened, she is introduced without ceremony to windows as wide open as in a consumptive hospital, to passing continually through the garden, without extra clothing, to the daily cold bath, to not eating between meals, etc.

Students from the first week of training are expected to notice the planning of the diet, hours of work, etc., and to be willing to form right habits in connection with eating, drinking, resting and working. All students go to bed at 9.30, and get about nine and half hours in bed. A disposition to rise before necessary is unusual. There are from eight to nine hours work a day. Some days this includes outdoor games; but visits to the schools for teaching purposes make an additional tax on the time.

The student is undoubtedly very hard worked, and great watchfulness is necessary to prevent overworking. It is a basal belief in the college that if women can be trained to work hard, and yet not overwork, a great end will have been served, although, of course, it is recognised that conditions producing overwork as often depend on the employer as on the employed.

During the first year about thirty lectures on personal hygiene are given by one of the women lecturers, each being followed by a discussion. In the third, fourth and fifth terms a complete course of lectures in hygiene, in its bearing on school life, is given by one of the medical officers to the college.

This course consists of a hundred lectures, and covers a joint syllabus based on those of the Royal Sanitary Institute, parts one and two, and Board of Education, Hygiene, Stage 2. Visits of inspection are made to all the neighbouring elementary schools.

Simultaneously with this run two courses in symptomatology (thirty lectures) and physiology (over two hundred lectures and demonstrations), which are related directly with hygiene and the hygiene of physical training.

Students have ample opportunity of seeing cases of deficient breathing, bad postures, lateral curvatures, etc., examined by the medical officer and of treating suitable cases with remedial exercises under a medical gymnast.

In all these ways the student is expected to obtain actual experience of hygiene as it bears on her personal habits, and a first-hand knowledge of healthy and unhealthy conditions as they apply to schools.

In the second year all students have an opportunity of giving practice lessons; such subjects as "The Structure, Function and Care of the Teeth," "The Structure and Function of the Skin," "Cleanliness," "The Respiratory System," "Ventilation" are chosen. An effort is made in these to bring hygiene and physiology into close relation with each other in simple lessons suitable for school-girls, and to prevent any subject of the students' curriculum being kept in a water-tight compartment.

When the class consists of first-year students the lesson is new to them, and the student-teacher has to answer the numerous questions which follow, and to lead the discussion. When the class consists of her own class fellows, she is usually submitted to a shorter, sharper questioning and a searching criticism as well.

As the college has only been in existence two years it is perhaps too early to forecast along what lines the training will expand, but it is certainly creditable that within a short space of time the schools of the town will be thrown open to students for practice in teaching hygiene, as they are at present open to them for teaching gymnastics.

In any case outgoing students are now equipped to teach hygiene to children of elementary school age. Many have sufficient grasp of the subject and of allied sciences to instruct in secondary schools, and to give short courses to teachers already in employment to whom the idea of school hygiene may be new. We do not consider the part of our two years' training which we are able to devote to hygiene however to be sufficient to equip a student for training teachers in the normal colleges unless she has had a previous science training elsewhere.

The combination of gymnastic and hygiene teacher seems a rational one. A personal enthusiasm of an executive character is needed alike in both; the training for teachers of gymnastics offers quite unique opportunities for the formation of new mental and physical habits. A deliberate and continuous effort is made to induce habits of order, tidiness, punctuality, good manners and consideration for others, since we believe that these form too important an aspect of mental health to be overlooked.

These habits should, of course, be acquired before college age, but when they are not, it is usual in colleges other than physical training colleges to give up the student as "hopeless."

From this point of view it is especially desirable that the student of

hygiene should be resident. It is doubtful whether, in the average young woman, a "hygienic conscience" can be cultivated if she studies, eats, sleeps and seeks amusement away from college. On the other hand, the hygienic conscience seems to be acquired almost unconsciously if the environment is uniformly hygienic.

The only rational order appears to us to be—live hygiene, learn hygiene, teach hygiene.

THE BENEVOLENT FUNDS OF THE NATIONAL UNION OF TEACHERS.

By Mrs. E. M. BURGWIN.

MRS. E. M. BURGWIN said this fund was instituted in 1877 for the purpose of giving relief to teachers in times of distress, and of assisting the widows and orphans of the teaching profession. The income from teachers' subscriptions for 1905-6 was £36,029. The investments, including two orphanages entirely owned by the fund, amount to £68,156.

The Council have for some time past been seriously considering the continually increasing number of consumptives needing sanatoria treatment. About sixty cases are dealt with every year, in spite of the fact that teachers are medically examined, as to their fitness for teaching, six times during their course of training. The numbers last year were eighty-three. The importance of teaching healthy rules for living, and the need of sanitary precautions, are very great in respect to this disease.

Mr. MURRAY (Edinburgh) drew attention to certain changes in the system of training teachers in Scotland. The recently-appointed undenominational "provisional committees" were finding that women students did not take advantage of open-air games, and physical exercises generally, remaining rather, in their lodgings during extra-collegiate hours, and thus injuring their health. Consequently these committees were appointing lady superintendents or wardens, and lady instructors of physical education, among whose main duties would be the institution of courses of outdoor games (hockey, ball-games, golf, etc.), and encouraging the women students to participate. They hoped thus to obviate the physical dangers of the critical ages of training.

Mr. JACKMAN (London) pointed out that the cause of teachers' breakdowns in health was the large classes, the restricted floor-space in elementary schools. Dust was also a great factor in causing throat troubles. The strain on the teachers, especially in infant schools, was now very great. A larger staff was necessary in order to give rest during the school session.

Dr. NEWSHOLME (Brighton) pointed out that the fact that twenty-six of the total eighty-three cases of consumption mentioned by Mrs. Burgwin occurred at ages under twenty-five, probably indicated that these cases had originated before the patient became a teacher. In both these, and in many of the cases among older teachers, infection did not occur in school life; but the school work called into activity latent infection. The circumstances leading

to this had been emphasised by the president in his address—the unnecessary dust, bad atmosphere, overwork and overstrain of teachers, insufficient floor-space. These were all extremely important and should receive attention.

Dr. ALICE JOHNSON pointed out the lack of teaching in the open air in the English schools, and suggested that we should copy our foreign colleagues and hold classes in our school playgrounds and in our parks when the schools are near them.

THE HYGIENE OF SCHOOL TEACHERS.

By Dr. DUCH PANYREK, *Medical Officer of Schools, Prague.*

THE health of teacher and pupil are mutually correlated. The teacher may act as a carrier of disease from the school to his family, or *vice versa*.

The importance of the teachers' health chiefly applies to contagious diseases, but is also applicable to mental states or diseases, or to conditions resulting from chronic diseases of digestion.

A discussion of the chief infectious diseases and their prophylactic treatment.

Prophylaxis can be attained by attention to the school generally.

For other factors, statistical inquiries are needed, based on morbidity and mortality rate relating to teachers. These facts can be obtained by the following means :—

- (1) From the teacher himself ;
- (2) From his physician ;
- (3) From life assurance returns affecting teachers.

These could be classified by a specially appointed committee.

The treatment of tuberculosis amongst teachers should be a special care of the authorities.

All teachers suffering from phthisis should be invalided to sanatoria on full pay, and not allowed to return to duty until quite cured ; they should then be appointed to more healthy posts in the country.

THE CARE OF THE TEACHER'S VOICE.

By Dr. HULBERT.

THE term "clergyman's sore throat" is quite familiar to all of us, but do clergymen really suffer from this affection more than other voice-users ? It is far better to call it "the voice-user's throat," for statistics prove that this affection is commonest in those who make the greatest use of the voice in their regular work. The ordinary clergyman has one

heavy voice day a week, the teacher has at least five heavy voice days. The elementary teacher uses the voice on an average about three hours every day, more than three for the lower standards, and less for the higher standards. Actors and barristers seldom use their voice for three hours a day, so that the teacher may be regarded as the greatest voice-user.

A large percentage of our teachers suffer from voice trouble more or less serious, the commonest affection being the voice-user's throat. The teacher has to live by his voice, and a loss of voice means loss of work. The worry of it often causes sleeplessness, loss of appetite, flatulency and indigestion; this ends in a complete nervous breakdown, and the teacher becomes a confirmed invalid, hysterical in the case of the female, hypochondriacal in the case of the male. I have mentioned very serious results, although I might have added mania and suicidal tendencies. I am most anxious to fix your attention upon the seriousness of the subject to be discussed. Hygiene has been tried, and with this may be associated medical treatment.

Early to bed, abundance of fresh air, abstinence from tobacco, alcohol, and highly stimulating foods are excellent in their way, but will not remedy loss of voice acquired through improper use.

Singing has been tried, and it does seem reasonable to suppose that the strengthening of the voice for singing should strengthen it also for speaking. But teachers who have learnt to sing lose their speaking voice. It is, however, difficult to define the term singing; it, like speaking, may be said to be the art of using the voice. One writer has defined singing as being "musicalised" speech. But what is often designated as being singing has not to my ears any music in it at all. I am afraid that many of the teachers of the art of singing in reality teach the art of shouting.

Physical education has been tried, but has been found wanting. Enlarged muscles of the arms, legs or trunk will not improve the voice, neither will the jerky movements following the sharp constricted words of command that are so much admired by many of the votaries of the innumerable systems of physical training. This is the quickest and surest way of ruining a good voice. The stiffening tendency of the systems of physical education that are presented to us one after another has so much effect upon voice that the voice becomes a very delicate index of what is right and what is wrong in physical training. It is even a more delicate instrument than is the clinical thermometer. Our singers have become so afraid of exercise in any shape or form that they prefer to go to the other extreme and get a preponderance of adipose tissue from masterly inactivity.

Voice production is the one and only remedy for the loss of the voice-user's voice. I would rather call it by any other name, such as voice-making, voice-mending, voice-building or voice-construction.

Very few appear to understand what voice production means. Voice production is neither singing nor elocution, it is physical education of the muscles of the vocal apparatus directly, and indirectly of all these muscles of the body which help the vocal muscles either directly or indirectly, and therefore it means physical education generally. It is the building up of the voice by a very special and delicate kind of physical training. Singing or elocution is the art of using that voice when it

has been made. Instrumentalists teach vocal students an invaluable lesson by their persistent practice and study of the technique of their manufactured instrument. How loth are voice-users to give time to the practice and study of the technique of their wonderful vocal mechanism.

How can the muscles that move different parts of the vocal apparatus (which consists of the chest, the throat, and the mouth and nose) work to advantage unless they are kept in a good position. The first exercises given in voice production are those that will ensure an easy and graceful poise of the body ; there must not be even a suspicion of stiffness, otherwise the vocal muscles are hampered in their work.

The breath is the voice, as the Psalmist tells us : " Let everything that hath breath praise the Lord." For voice, this breath has to be well under control. Not only is it necessary to teach adequate economy and compression of the air in expiration, but there must be a due regulation of the inspiration as well. This entails the teaching of exercises whereby both the inspiratory and expiratory muscles are well controlled. This must be effected without causing the slightest stiffening of the chest walls. Weeks and even months pass by before that degree of elasticity of the chest and abdomen that is required for voice can be obtained, even by the most gifted teachers. The teacher of physical education is unable to understand what this elasticity means, and will call chests elastic that are much too stiff for voice ; or they will get the elasticity in that part of the chest that is not specially constructed by nature to be elastic.

Man uses different kinds of breathing for different purposes ; there is the breathing of repose, the breathing for action, and the breathing for voice.

In the breathing of repose the air enters and leaves the lungs in the smallest quantities, and in the easiest possible manner (unless a bad position has been assumed). Usually the diaphragm quietly moves up and down and the breath enters and escapes through the nose.

In the breathing of action, as seen in violent exercise, the mouth is opened wide and there is a forcible contraction of both the inspiratory and expiratory muscles to take in and emit as much air as possible in the shortest time, so that a very rapid exchange of gases may take place ; this is most marked when people are said to be " breathless."

In the breathing for action it is necessary to fully expand the chest at the level of the lower part of the sternum, so as to get the greatest quantity of air in at each inspiration. Most athletes wear something tight round their abdomens, and some long-distance runners wear wide bands of silks around their trunks ; this prevents protrusion of the front abdominal wall and promotes action of all the true or intrinsic muscles of inspiration.

In an extreme state of breathlessness, or in cases where there is an obstruction in the air passages, the so-called extraordinary method of breathing is brought into play, that is to say, the external muscles of respiration are made to contract, the muscles passing from the chest wall to other parts of the body.

The physical educationalist is too much given to teach the use of these extraordinary muscles in breathing exercises, and hence their failure from a voice, and, it may be added, a health point of view.

The chief internal breathing muscles are the intercostals and the

diaphragm. In vocal culture it is absolutely necessary to give them free play and at the same time to keep them well controlled. The sooner this is recognised by the authorities of physical education the better will be the results, of course, supposing that their aim is the welfare of the body and not mere discipline or display.

For voice, the air must be drawn in as easily and as quickly as possible, often in quite large quantities at a time; it must be emitted as slowly and as sparingly as occasion demands, and at the same time the air must be compressed. This, in practice, is effected by a contraction of the abdominal muscles while voice is being made. It is the delicate and refined movement of the abdominal muscles (called, for short, the abdominal press) that enables the trained student to sustain the voice right to the very end of each phrase, and to keep brilliancy of tone upon the voice while making the variety of sounds contained in those phrases. Any stiffness or slowness of the abdominal muscles will affect the tone of the voice. As that stiffness gradually disappears under proper treatment, so the tone gradually becomes fuller and more mellow.

Most writers on reading and speaking say that audibility and distinctness are more important than tone. It is possible to be fairly audible and quite distinct while making vocal sounds that are anything but pleasant to hear. There is only one consolation for the listener, and that is that the speaker has only to continue to make these noises for a certain time and then he will lose his voice. Tone increases the audibility of the voice and gives the speaker a chance of expressing the sentiment that he has uppermost in his mind.

The art of speaking or teaching may be said to be the capability of conveying sentiment or thought to the hearer. It is not enough to be heard; the speaker must be felt; he must feel himself, and convey that feeling to his audience; then his heart is speaking to the hearts of his people. This can only be done on tone. The voice and manner are just as important as the matter.

The relief for the functional voice troubles of the teacher must be sought in the pure tone that only voice production can give. It is astonishing, too, what a number of functional troubles of other parts of the body disappear at the same time, one being indigestion.

So far-reaching in its effects is voice production that I feel inclined to address all I meet with the words used by Horatio to Hamlet's father's ghost: "If thou hast any sound, or use of voice, speak to me."

Dr. PERMEWAN (Liverpool), in opening the discussion, said he agreed that the voice-trainer was the person who ultimately must deal with the functional troubles of the voice-user. But it was most essential that the real physical condition of the larynx and its accessory cavities should be first exactly ascertained. It was of no use trying to cure by exercises conditions really due to definite organic disease. As in so many other subjects, therefore, the combination of the voice-trainer and the throat specialist was essential. One cause of voice trouble in school teachers was the pernicious habit of holding several classes in the same room. Dr. Permcwan congratulated Dr. Hulbert on having given a clear, scientific description of the art of voice production.

Mr. T. W. WILLIAMS (London) said the first necessity of voice production is deep breathing. Nature points the way, having supplied the organism with millions of tiny cells all calling for oxygen. It should be compulsory for deep breathing and voice production to be taught by qualified teachers,

and it should take a first place on the school curriculum. Much good is lost in lectures, etc., by excellent matter being given out in a most painful, unconvincing, and soulless manner. Teachers need not despair. Deep breathing and voice production can be acquired by intelligent people fairly quickly. The practice of proper breathing will become the best preventive of consumption and diseases of the respiratory organs, the seed of which is often sown in the schoolroom.

Dr. HULBERT (Manchester): The throat specialist undoubtedly should be entrusted with the organic vocal defects and the skilled voice-builder should only deal with those cases of functional voice troubles that are brought about by improper voice use, and which can only be remedied by voice-production. It is impossible for any one man to be an authority on every part of the vocal apparatus; and to say that the voice-producer should know more about the different parts of that apparatus than the specialist is absurd. There is plenty of room for original research left for all who are interested in any branch of the subject, but let the original research be founded upon scientific facts and not built up on fads.

There is a school that relies upon sentiment for the production of the voice, but that is beginning at the roof and working down to the foundation instead of *vice versa*.

The solution of breathing for voice is not summed up in the one word deep-breathing. The question of the right breathing for voice is a very difficult subject, and has been dealt with at length by me in a book entitled, "Breathing for Voice Production," which answers the objection made that the medical profession had not taught it.

SCHOOL OVERWORK AS SHOWN BY EFFECT ON THE TEACHERS.

By MARGARET McMILLAN, London.

(*Abstract.*)

MANY teachers show signs of chronic fatigue. The high death-rate, the attendance records, and also, to an appreciable extent, the methods, traditions and customs of the profession, point to the existence of strain, and also of adaptation, in view of such conditions.

Teachers represent the pick of the scholars attending the common schools. They also belong to a race noted for courage, enterprise and initiative. Yet it is notorious that many of them become slaves of routine, and show a deplorable timidity in face of even the most unenlightened authority. Moreover, safeguarded as few workers are, they yet show an ever-present anxiety and dread of losing their bread and butter, an anxiety out of all proportion to the actual risk. These fears are symptoms, and betoken a disorderly working of the higher brain centres. They mark the deteriorating effect upon the nervous system of monotony and of fatigue, induced, not by hard work, but by a method of work that robs it alike of its educative power and of its natural reward. Schools and societies have existed for centuries which made one of their great aims the teaching of persons how to avoid these

great evils (of wrong learning) which now overwhelm so many. The mistaken methods of learning and teaching that induce chronic fatigue must be given up.

In modern days physiologists have thrown new light upon these teachings. Mosso, in his works on "Fatigue" and "Fear," has demonstrated how fatigue is a kind of poisoning, a form of paralysis. He also shows how education, rightly understood, is a means of warding off fatigue for longer and longer periods, and of resisting the onset of violent and depressing emotions. Briefly, the fatigue of teachers of to-day is the result, first, of the engaging in studies with quite other ends in view than are those of the genuine student and without the interest that sustains him; secondly, of the large classes and routine methods consequent on these; and finally, of the withdrawal of such real freedom and responsibility as leaves to the ship captain, the military leader, the independent worker in any field, the conditions for developing courage and initiative.

Councillor WADDINGTON, J.P. (Bolton), said this overwork is not so much the effect of teaching as the result of two factors—the home conditions and the unsatisfactory school buildings. He had listened to the discussions and papers in the various sections always with the spectre of the ratepayer. He ventured to be so unorthodox as to suggest that the teacher's labour in the schools could hardly be said to be so exacting as the bad conditions under which the work is done. The education code is overcrowded, in no small measure due to such conferences as this. He hoped that teachers would be more courageous in settling subjects to be taught.

Dr. SHRUBSALL (London) said it had been the personal experience of the speaker that the first sign of overwork in a public school was talking during sleep. This was most marked after hard preparations, such as mathematics, and was much exaggerated before examinations. Mouth-breathing was not entirely responsible for this condition. If a child talked regularly in his or her sleep the amount of evening preparation should be reduced.

Mrs. EDER (London) was glad to have it explained by Miss McMillan why teachers suffer from fear of losing their position. As one of those who send away children under the Country Children's Holiday Fund, she noticed that those going away in the first batch are very dull, whilst those going in the second are much more lively, which is no doubt on account of their having somewhat recovered from effects of school fatigue.

EXPERIENCE OF TEACHING HYGIENE AND TEMPERANCE TO PRIMARY SCHOOL TEACHERS.

By G. SIMS WOODHEAD, M.A., M.D.,
Professor of Pathology in the University of Cambridge.

It will be remembered that a committee, representative of more than 14,000 members of the medical profession, the British Medical Association, and the Board of Hygiene and Temperance, presented to the Board of Education, first in 1904, again in 1906, and finally in 1907, a memorandum in which the Board was urged to encourage teaching which should lead

children to appreciate at their true value healthful bodily conditions, cleanliness, pure air, food, drink, etc., and "to include in the simple hygienic teaching which we desire elementary instruction at an early stage on the nature and effects of alcohol." Accompanying and following up this action the committee collected a large amount of information from the army schools and from our colonies, from the United States of America and from the Continent, and they made inquiries from local education authorities as to their willingness to introduce the teaching of hygiene and temperance into their schools. They then found that much was already being done in this direction, and further, that many of the counties, county boroughs, school boards, urban districts, and boroughs were anxiously considering this question. With this knowledge at their disposal the committee proceeded to draw up a provisional syllabus of hygiene and temperance for the use of teachers in the elementary schools. Of this syllabus I need here give no detailed description, but I may state that it was designed to meet the requirements of teachers who are already trained in other subjects. The list of lectures is not intended to be regarded as final as regards the distribution of the time and even as to the amount, arrangement and method of instruction. The course is "intended to be primarily a very practical one, each sitting of the class consisting of two hours' work, the first comprising a fully illustrated lecture, and the second hour a practical examination by the students of the materials forming the subject of the preceding discourse." Of course many objections were raised to this syllabus. The first of these was that the work of the syllabus could not be gone over in the time allotted to it. Then it was objected that it would be impossible to give practical demonstrations on much of the course that was sketched out; but the most serious objection of all was that the teachers, however willing, were already so overburdened with work that they would not undertake to attend these lectures except under compulsion, direct or indirect, and finally, that when they had undertaken it, it would be of very little use to them in the conduct of their practical everyday work.

An opportunity of putting many of these objections to the test presented was offered to me. The memorandum of the 14,000 being brought to the notice of the Cambridge County Education Committee, this body asked me if I would undertake a course of lectures to be given on twelve Saturday mornings during the winter months. It was suggested that some thirty or forty teachers would probably wish to attend. In order to be on the safe side we made arrangements to receive sixty students. Very shortly we were asked if we could take eighty, then ninety, and finally there was such a demand that although we could take only ninety for practical work, some fifty or sixty more were allowed to attend the lectures only. Those who attended both lectures and practical work were to be allowed to sit for the examination to be held at the conclusion of the course. The railway fares of teachers were to be refunded, and the education authority agreed to defray the cost of the lectures and demonstrations; they also arranged that a special salary grant of £5 per annum should be made to each of the students who passed a satisfactory examination, only those who attended five-sixths of the course being allowed to sit for examination. To make the lectures as interesting as possible, free use was made of models and of lantern slides and experiments. No attempt was made to load the lectures with detail, as we were dealing, not with those whose

interests had to be aroused, but with men and women anxious to learn. For details I referred the students to the several excellent text-books, and I encouraged the asking of questions wherever possible. In the practical demonstrations we called to our aid the dissecting scalpel, the test-tube and the microscope. The brain and the spinal cord were examined; the eye and the ear were dissected and examined under the microscope; the structure and functions of the various organs and tissues of the body were considered; they were examined in position and then isolated from the body; the organs of the sheep, the pig and the rabbit being taken as our types. First of all the anatomy was gone over, then the histology, and finally the function of the tissues that were being examined. The elements of the physiology and chemistry of respiration; the bearing of these on ventilation; something about the physiology of fatigue; the action of various poisonous substances upon the nerve-cells and other tissues of the body; all were illustrated as far and as fully as possible. In all this work the students were most eager and enthusiastic. I will not say that I have not had more thoroughly trained students, because one realises that the medical student is something of a specialist before he comes under one's hands, and that the school teacher has had to devote a very large part of his time to the study of subjects which could have little bearing on the work of our course in temperance and hygiene; but the general educated intelligence brought to bear was very striking indeed, and was a marked feature of the work of the class.

In order to determine the nature and depth of impression that was being made on the class as a whole, I asked the students, a fortnight before our work closed, to write an essay stating what they had learnt from the work of the course, and what effect they thought it might have upon their teaching. I was aware, of course, that such a request might be open to misconception and misconstruction, that a self-conscious teacher might say a great number of things that he or she had not really felt, and that some of the students might be under the impression that I should be pleased if they "prophesied smooth things" of my lectures. As I had a definite object in view, however, I took the risk of all this; but I should like you to bear this in mind when you listen to some of the quotations that I shall read from some of the papers that were sent in at the examination, and from the essays written in response to the request above referred to. At the end of the course the following questions were set for a two hours' examination:—

1. What points would you specially bear in mind in your study of the development of the nervous system of a child under your care; and how would you study the question of food, work, rest, and poisons (of various kinds) in relation to this system?

2. Muscle, cartilage, intervertebral discs, bone and blood vessels. How are these affected in connection with deformities arising out of bad posture?

3. Write a description of the eye of the child, giving a short account of its structure, development and physiology, and the bearing of these on the training of the child.

4. Give a short description of the way in which alcohol is said to act on the nerves and nerve-cells with which the peripheral sense organs are connected.

5. Write a description of the room in which you teach. Make any suggestions you can for the improvement of the lighting, heating, ventilation, and arrangements of desks, etc., in this room.

(a) These questions cover a somewhat wide field, but as we had gone into principles rather than into minute details, I felt convinced that most of the students would be able to tackle the questions at least intelligently. I found that of the ninety who might have become candidates fifteen obtained first-class honours, or 75 per cent. of the available marks, thirty-nine obtained second-class honours, with over 55 per cent. of the available marks, and eight obtained a sufficient number of marks, 45 per cent., to obtain a certificate. To arrive at this marking I included marks for both essay and examination.

(b) In setting question 5 I had two objects in view. In the first place I wished to see how the students would apply, and in individual cases, what we had been considering generally and academically. In this part of the work I was not disappointed, for some excellent practical suggestions were made for the ready and economical transformation of poorly lighted and badly ventilated schools into schools that would be at any rate moderately occupiable places in which children might be taught.

This brings me to my second object. I wished to gain at first hand some idea of what the teachers thought of the places in which they were carrying on their work. Such information is not for publication, but if properly utilised by the advisers of the County Education Committee it may prove to be valuable.

(c) I may now give extracts from some of the essays and papers that were sent in for examination. I have selected paragraphs from all grades of papers, not only those that obtained high marks, but those that obtained just sufficient marks for a pass. The majority of the extracts are taken from papers at the lower part of the first class and the second class, as these seemed to contain the average opinion of the teachers. (*Numerous extracts read.*)

This experience has shown that the teaching of hygiene and temperance, especially in connection with nature-study, should be one of the most popular and, at the same time, one of the most useful subjects of a primary school curriculum. Real education must be the outcome of such teaching. Then I was greatly struck by the keen personal interest that a large number of the teachers took in the welfare of their scholars; and this, I believe, is the reason that they are so anxious to gain a knowledge of hygiene and temperance—that they may apply it in the best interests of their pupils. I am satisfied they gain such an insight into the life and surroundings of the child that they will be able to apply the knowledge they obtain in a way that no one else could, and to convey to the child's mind just those things that are necessary for its welfare. I was also greatly impressed by the fact that, whilst assuming all necessary responsibility, the teacher is anxious to have someone on whom he or she can rely for advice, help and encouragement, as regards the methods of discharging, not only their teaching duties, but of safeguarding the physical health of the children under their charge; and I believe that nowhere would trained inspectors on these subjects be more highly appreciated and accepted at their proper value than by the teachers. Similarly, the institution of a medical bureau for the collection of information, the control of physical inspection and the distribution of skilled advice as to the improvement of methods of teaching would be welcomed most warmly and even enthusiastically by the teachers in our primary schools. Of course I hold that similar teaching should be given in our secondary

schools, but for the present I wish to give my experience of such work as carried out by the primary teachers, and that experience, so far as it goes, is of a most encouraging character.

During the course I took an opportunity, when we were considering the facial appearance and bearing of children of weak intellect, of showing a number of illustrations of the face, bearing and condition of the hands of children who were examining pictures of various subjects, and I was very much struck by the importance attached by the teachers to this part of the work. They appeared to recognise that the avenue to the understanding of a child's mind is much more direct than most people seem to imagine, and that we have in these external manifestations direct guides as to the mental activity of the child, direct evidence of fatigue—overwork—such as can be obtained in no other way. There seems to be a consensus of opinion amongst teachers that in future we must rely much more fully upon nature studies, and especially upon well directed observations, than upon the cramming of a child with facts and upon drill on hard-and-fast lines. Anything that a child has seen and reasoned about is in future a part of the mental equipment of the child to the extent that the mind has been strengthened and rendered a more accurate instrument. This kind of education may always be carried out under the most favourable conditions, for it is evident that the child need not be confined to the classroom in order to be benefited by it. Moreover, with an education so commenced, the child is placed in a position to continue its own education after it leaves school.

Finally, I was struck by the presence of such strong conviction amongst school teachers that tobacco is injurious to young lads, and that alcohol is answerable for much and many of the unfavourable conditions under which many of our school children suffer, and by which their education is interfered with, not only in our towns, but in the country. No one more than the school teacher seems to realise what a part alcohol plays in the production of many of the objectionable features of our modern life that interfere with the development, physical, intellectual and moral, of the rising generation. For this reason instruction in hygiene and temperance may, in the hands of the teachers, be a most valuable instrument for raising the habits and the ideals of the child, the man or woman of the future, without causing it to bring unkindly criticism to bear on the habits and ideals of its elders.

SECTION IV.

INSTRUCTION IN HYGIENE FOR TEACHERS AND SCHOLARS.
ENSEIGNEMENT DE L'HYGIÈNE AUX MAÎTRES ET AUX
ÉCOLIERS.

HYGIENISCHE UNTERWEISUNG FÜR LEHRER UND
SCHÜLER.

President.

SIR WILLIAM J. COLLINS, M.P., D.L., J.P., M.D., M.S.,
B.Sc., F.R.C.S., D.P.H.

Secretaries.

H. MEREDITH RICHARDS, M.D., B.S., Croydon.
ALICE RAVENHILL, F.R.San.I., Loudon.

ADDRESS by SIR WILLIAM COLLINS, M.P., *Vice-Chancellor of London
University ; President of the Section.*

ALLOW me to acknowledge the courtesy which has placed me in the chair of this section, and to assure you that I will not reciprocate the compliment by ungraciously inflicting upon you a longwinded address. I will invite you at once to come to close grips with the problems connected with "Instruction in Hygiene for Teachers and Scholars." It cannot be said that this aspect of school hygiene has in recent years suffered neglect, or that it has not been the topic of much discussion and deliberation. It has, no doubt, been alleged that in this country, at any rate, educational authorities have rather exhibited an unnecessary amount of deliberation. I hold no brief either for State or municipal departments in this matter, but I have sometimes thought that hygienic enthusiasts in approaching these authorities may have asked in vain because they have asked amiss. In this, as in other areas of educational administration, we have been compelled to observe that would-be reformers are often agreed where they are not precise, and are precise where they are not agreed. But, as one who has preached the gospel of hygiene and sanitation for more than a quarter of a century, I am sincerely anxious to see progress made and school life rendered as available as it may be for teaching how to live, in the fullest sense, physically and morally, as well as mentally.

To teach hygiene successfully in school surely involves clear conceptions of—

1. What we connote by the term hygienic.
 2. What we regard as the scope and aim of school education.
 3. What we consider to be the methods and end of teaching.
- If our discussions are to lead to fruitful action we must clear our

minds of cant, we must endeavour to define our terms and prove our propositions, and make it impossible for educational Ministers or authorities to charge us with vagueness in our views or impracticability in our prescriptions.

Turning to that reservoir of omniscience, the "Encyclopædia Britannica" to discover the connotation of the term hygiene, we learn that "it aims at rendering growth more perfect, decay less rapid, life more vigorous and death more remote," and to this end we are urged by the learned author of the article to a "study of such diverse sciences as physics, chemistry, geology, engineering, bacteriology, and statistics," and he might have added anatomy, physiology, psychology, climatology, and a few more.

This, however, suffices to show that, as with nature study, and with that study which Huxley advocated under the name of "physiography," hygiene cuts across the 'ologies and takes something from several of them. It is not to be confounded with instruction in preliminary science; and though, like medicine, it might be logically classed as a part of applied biology, it is in fact an art rather than a science—it is the art of healthy living and involves a code of health. Again, in so far as such an art aims at the formation of habit and the direction of conduct, this study runs up into morals. This art of healthy living then, though dependent upon science, or several sciences, must, in its appeal to the young, be taught as an art precedent to the acquisition of the knowledge upon which its rules are based. Knowledge truly implies, and indeed is, power, but it is power over nature, and not necessarily over ourselves, and in so far as hygiene seeks to shape conduct and character, and through inculcation of habits impinges upon morals, it makes an appeal to the will and to the momenta which urge and direct volition.

This leads me to my second point, viz., How and how much of this art of healthy living can be and should be taught in school? Matthew Arnold used to define the object of education as being "to conduct the pupil through the means of his special aptitudes to a knowledge of himself and of the world." Such a conception of education clearly postulates both nature study and human nature study; but Arnold, in another of his works, speaks of character and conduct as making up two-thirds of the essentials of life, the remaining third being allotted in equal parts to science and to art. In so far, then, as teaching the art of healthy living means inculcating duties and formulating habits, it is clear that it cannot be taught by what is termed the heuristic method. To find out for one's self, or, to put it scientifically, to allow the experience of the individual to repeat and epitomise the historic experience of the race, may suffice for teaching the 'ologies, but it will obviously not do in the teaching of conduct and in the sphere of morals. In the teaching of hygiene, then, tuition in the art must precede the acquisition by the pupil of the knowledge which underlies and sanctions the precepts whereby the art is cultivated.

The assertion that all learning implies contact with a superior mind is truer in the case of such tuition than it is in the case of subjects that can be taught heuristically. It is proverbial that cleanliness is next to godliness; it is not less true that

Hygiene and virtue closely are allied
And thin partitions do their walls divide.

If the teaching of hygiene be thus understood, it follows that the opportunities of the boarding school are different from and greater than those of the day school, and the method of teaching in the secondary school will differ materially from that in the elementary school, in so far as the maturer years of the scholars will permit knowledge of the scientific grounds for the rules of the art to be imparted concurrently with their application.

In our public elementary schools for nine years—from five to fourteen years of age—for some 200 or more days a year, and for five hours a day, the children are in school. This limited influence of the school has doubtless led the Board of Education, in their valuable "Suggestions for Teachers," to lay it down that "the duty of safeguarding the health of children of school age is only in a limited degree a duty of the school," and that "the task of forming good habits in regard to such matters as food, clothing and cleanliness is primarily for the home."

On the other hand, one cannot shut one's eyes to the fact that in reports of commissions and committees, both in and out of Parliament, and of county councils, there is an expectation, if not a demand, that more and more shall be required of the school and its organisation in securing the physical, mental and moral culture of the child. It is the organisation of school life which, in the course of a generation, has wrought so great a change in the thought and habit of the nation—the bringing into the public view of the child life of the country, betwixt five and fourteen years of age—which has been instrumental in inducing social reformers to endeavour to attach to the school benevolent agencies of various kinds intended for the betterment of the rising generation.

Take the much criticised Provision of Meals for School Children Act of last year, in which I lent a hand. It was cogently argued that, inasmuch as the State has seen fit to compel the attendance of children between the years of five and fourteen at a certain place, for a certain number of hours daily, for the betterment of their minds, the State cannot rest indifferent to the condition of those children's bodies. Moreover, the midday meal, served in the school hall, may be made a valuable educational agency in the matter of healthy living, cultivation of good habits and etiquette. No one who has attended such meals in our L.C.C. schools, as I have, can remain unconvinced of the truth of this proposition; and I see that the Commissioner of the *Lancet* reports that the educational value of the school canteen is even more recognised on the Continent, and especially in some provincial towns of Italy, than is the case here.

All this tends to show that the State cannot cry a halt in the present position of school organisation. You may regret that the Education Act of 1870 was the first step in what may be denounced as a socialistic departure. The State has either gone too far or it has got to go further; and, if the latter, then, in the case of dire necessity, it will have to put its stately hand into the State pocket and administer, grudgingly or otherwise, State aid. How to do these things without overriding parental rights or undermining parental responsibility is a problem of the greatest delicacy and difficulty. Here, as in many other instances, humanity and liberty, the State and the individual, appear to assert rival claims, and their due adjustment will continue to tax the power and the skill of the twentieth century statesmen.

The feeding question is, however, one only of many hygienic problems of child life. Every hour of every day raises others scarcely less important if we are to have regard to symmetry and thoroughness in education, whether it be physical, moral, or mental. Cleanliness of person and clothing, sanitary environment, physical exercise and drill, orderly and punctual performance of duties, thrift, fortitude, temperance, good manners, self-respect, self-sacrifice, true patriotism, form an ascending series of hygienic and moral observances, each and all of which are surely as important in the culture of good citizens as are some of the subjects of instruction which bulk large in the time-tables of elementary schools whether public or private.

This leads me to my third and last point, namely, the teacher and the teaching of hygiene. The President of the Board of Education, I understand, has recently declared that he is precluded from doing all that he fondly desires to do in these directions because the necessary teachers are not to be had.

In matters of hygiene more than in most subjects one may well ask the pertinent question, "Thou, therefore, which teachest another, teachest thou not thyself?" If, as I have said, we must in such a subject as this adopt the didactic and not the heuristic method of instruction, the rôle of the teacher becomes proportionately more onerous and responsible, and the syllabus to be laid down of supreme importance. Thring used to say that "teaching is a lifelong learning how to deal with human minds." In laying down a code of healthy living, and in imparting this pontifically to hundreds of thousands of those who will be the citizens of to-morrow, the State through its teachers assumes a huge responsibility in dealing, in a wholesale fashion, with human minds, but one which the steps it has already taken would seem to preclude it from declining to assume. It is, of course, bound to take all possible pains to eliminate error from such teaching, to base it on the best knowledge to be had, to call to its aid those whose wide and deep philosophic insight constitute them safe guides (such are not exclusively to be found within the limits of the medical profession), and to ensure that those who teach shall have had a training broad enough, and possess knowledge full enough, to clothe their words with the requisite authority. Such teaching, so far as it is directed to form habit and regulate conduct, must necessarily permeate the whole of school hours, and, it is to be hoped, will be supplemented and augmented by the influences of home, or perchance will in turn influence for good the home itself. In so far as such teaching is accompanied by knowledge giving reasons for conduct (and increasingly so as the highest standards and forms are reached), should hygiene in some of its aspects receive a recognised and specified place in the school curriculum.

I was one of a deputation of three who last year waited on Mr. Birrell when he was at the Board of Education to urge, as we did successfully, the introduction of moral instruction into the code.

If I have dwelt more on what I may call the moral rather than the merely physical side of the teaching of hygiene, it is because, in an age rather prone to materialism and hedonistic ideals, this, the more valuable side, as well as the more difficult to impart, is sometimes subordinated to mere bodily culture. It is just because hygienic teaching has this side that the successful teacher of the art of well-being and well-living must

be less of the pedagogue and more of the guide, philosopher and friend, especially the philosopher and the friend. He must be able to furnish to the unfolding consciousness and conscience of the child answers alike to the dual question what he is and what he ought to be. There is truth in the dictum of Herbert Spencer that no one is truly educated who is not able to do what he ought to do, when he ought to do it, whether he wants to do it or not. This Congress, and especially this section of it, will discuss the teaching of hygiene for teachers and scholars in its broadest aspects; we especially invite the co-operation of our visitors from abroad as a solvent of insular prejudice. The Royal Sanitary Institute, which has helped to promote this gathering, was founded by men of philosophic insight like Chadwick and Richardson; we meet within the walls of an Institute which is imperial in its scope and of a University which is based on broad and liberal traditions, and which flings wide its doors to all comers and all creeds. The time is opportune and the place inspiring. The President of the Board of Education tells us he is but holding his hand that he may reap the fruits of our labours and put them to practical purposes. It has been well and truly said that if you do not know what to do you should do nothing, and it may be that such justification for ministerial inaction has hitherto existed.

I trust that when our labours are concluded there may be such a consensus of informed opinion on what ought to be done and how we ought to do it that the reproach may no longer lie against education authorities, here or elsewhere, that they have left undone those things which they ought to have done.

DE L'ENSEIGNEMENT DE L'HYGIÈNE DANS LES ÉCOLES ET LES COLLÈGES.

Par le Dr. FOVEAU DE COURMELLES, Paris, *Lauréat de l'Académie de médecine.*

LA nécessité, à l'école, au collège, à l'Université, de l'enseignement de l'hygiène est, à l'heure actuelle, démontrée et admise incontestablement; et cependant il ne peut en être que défectueux, car cet enseignement n'a pas de bases. C'est qu'en effet les locaux scolaires, écoles et collèges, contreviennent généralement eux-mêmes aux lois de l'hygiène: par leur mauvais éclairage, la ventilation défectueuse, les établissements les plus récents ne font pas exception à cette loi; ils sont magnifiques d'aspect et d'architecture; mais à l'intérieur rien n'est changé. Or, pour bien enseigner l'hygiène, il ne le faut point faire par des mots ou des leçons arides, mais bien par des exemples, par des faits, par des applications immédiates et visibles. Dire à l'enfant, en une école malsaine ou peu hygiénique: "Ce n'est pas ainsi que devrait être cet établissement; non, il devrait être de telle ou telle manière pour être sain et conforme à nos besoins physiologiques"—cela me paraît une abstraction incompréhen-

sible pour lui, et même pour les adultes incompetents, et ils sont nombreux. Pourquoi donc exiger de l'enfant ce que l'homme a du mal lui-même à saisir et comprendre ? N'est-ce pas cependant ce que l'on fait tous les jours ?

Ce que l'on doit faire d'abord, c'est avoir le maximum d'hygiène dans les écoles et les collèges, pour pouvoir dire aux enfants : " Nous nous conformons aux lois vitales, parce que nous sommes dans telles et telles conditions—visibles et tangibles—qui conviennent à nos organismes."

Quand on aura appris à la mémoire de l'enfant, et non à son intelligence, que l'air, pour être respirable, doit contenir 20·8 d'oxygène et 79·2 d'azote, pas d'acide carbonique ; croit-on que ces notions abstraites lui auront appris de l'hygiène ? Nullement. Mais si, au contraire, à propos de chimie, on lui a montré l'oiseau, l'animal placé dans un milieu irrespirable et y suffoquant, y mourant, il aura compris le rôle vital de l'oxygène. On devra alors lui expliquer que, sans arriver à ces extrêmes, l'homme placé dans des milieux à air vicié, perd lentement, mais sûrement, de la vie, de sa force d'existence et de réaction contre les maladies : les milieux renfermés, le surpeuplement, les foules où s'exhalent les odeurs humaines, où se vicie l'air, sont donc des endroits malsains.

Il faudrait aussi pouvoir lui faire comparer son école saine (quand elle le sera) avec les milieux malsains qui existeront longtemps encore trop nombreux.

Tout peut être prétexte à l'enseignement de l'hygiène et de la morale, qui n'est autre, d'ailleurs, que l'hygiène des passions à comprimer en d'étroites mesures. Tout fait même historique peut être matière à l'enseignement de ces choses. Que d'épidémies survenant à la suite de guerres, surtout dans le passé ! Comme le professeur peut alors comparer l'absence d'hygiène, favorisant l'éclosion de ces fléaux qui disparaissent actuellement de la surface de la terre, avec le présent de plus en plus salubre ! Les maladies évitables deviennent ainsi plus nombreuses, moins longues à guérir ; la longévité augmente ; et de tout cela l'hygiène est la cause victorieuse.

Mais, on ne le saurait trop dire, il faut que l'enseignement de l'hygiène soit rationnel pour porter tous ses fruits. Il faut que les exemples vus par l'enfant autour de lui ne contredisent pas ce qu'on lui apprend. Quand il a, à de rares exceptions près, l'absurde mobilier scolaire actuel, ces tables uniformes pour des enfants de tailles différentes, à l'âge où l'on grandit, où la colonne vertébrale est souple, et sur lesquelles tables il se doit courber, comprimer ses poumons, appliquer ses yeux à de trop courtes distances puisqu'il s'y couche presque, comment veut-on qu'il croie à l'hygiène ?

Quand l'éclairage n'est pas unilatéral gauche, l'orientation sud, quand il n'y voit pas à l'école, se contorsionne pour entendre et apprendre quand il est studieux, comment admettre que les plus belles leçons sur l'hygiène puissent être profitables ?

Les médecins-inspecteurs des écoles, à Bruxelles notamment, où l'hygiène scolaire est depuis longtemps en avance, s'occupent de la santé de l'enfant. Selon ses facultés sensorielles, ouïe, vue, . . . n'y a-t-il pas lieu dans la classe de le placer en des conditions déterminées ; voire, de lui expliquer pourquoi, ce qui sera une excellente et pratique leçon d'hygiène. Ainsi maints élèves studieux ne deviendront pas des paresseux,

faute de voir ou d'entendre, parce que placés trop loin pour leurs organes.

Les bonnes tables scolaires existent déjà nombreuses : les tables du Dr. Rolland (de Toulouse), Féret (de Paris), de Mauchain (de Genève), à élévation facultative, s'approprient à la taille de l'enfant. L'optostat intégral du Dr. Rolland maintient en outre la tête pour empêcher la myopie. Si l'enfant se doit courber pour devenir myope et bossu, ce qui actuellement est son apanage, comment comprendra-t-il l'avantage de se tenir droit et de s'épanouir librement ? Combien de classes se pourraient du reste faire au grand air et debout ? Le dessin d'après nature, l'histoire naturelle, la botanique, pour ne citer que ces deux matières d'enseignement, se pourraient faire dehors. Que de promenades à la fois hygiéniques et scientifiques seraient possibles dans la nature, les usines !

On allègue, je le sais bien, maintes impossibilités matérielles. L'argent ? mais que ne remplace-t-on peu à peu l'ancien mobilier usé par du nouveau et rationnel ? Les leçons de choses pourraient être enseignées économiquement au dehors, près des objets eux-mêmes, et de là une leçon d'hygiène découlerait. On parle aussi de la difficulté de tenir les élèves : c'est la plus sérieuse, certes, des objections à faire, mais non insoluble, croyons-nous !

Le chauffage, l'hiver, peut à la fois servir d'enseignement de la physique et de l'hygiène. Il ne me paraît pas qu'on en fasse une leçon de choses, cependant si facile et si pratique.

Les besoins naturels qu'une fausse pudeur empêche d'effectuer normalement, chez les filles surtout, sont pour l'avenir des causes pathologiques graves, coprostase, déviations d'organes, . . . De même, pour les garçons, " quand ils ont dix-huit ans," et même avant, ne convient-il pas de les initier aux dangers nombreux et terribles de leur initiation et émancipation ? En ce dernier domaine, faut-il un enseignement collectif ? Je croirais plutôt à l'utilité du maître saisissant en promenade ces désirs à la vue de l'autre sexe, et venant parler amicalement à l'élève des dangers possibles, du respect qu'il se doit à lui-même et aux autres. Et la jeune fille, l'enfant vu, la poupée, serviront à apprendre pour l'avenir la *puériculture*—sans ce vilain mot—et les soins que doivent recevoir ces petits êtres.

En somme, je ne crois guère à l'enseignement didactique de l'hygiène, mais à son enseignement incessant, à propos de tout, et nulle matière n'y prête mieux, à mon sens.

Dans les *sports*, qui empêche les maîtres de faire ressortir l'utilité physiologique de tel ou tel mouvement, par suite son côté hygiénique développant tel organe, telle région ? Et si l'enfant est faible sur un point de son organisme, on lui apprendra à corriger la nature, à fortifier la région débile par tel sport lui convenant mieux que tel autre. Sachant le pourquoi des choses, l'enfant réalisera mieux ce qu'il doit faire.

À propos des sports, je suis de l'avis d'Herbert Spencer, qu'il n'en faut point abuser, ce qui est une tendance de l'heure présente. Il ne s'agit pas de faire des clowns de tel ou tel exercice, mais bien de développer, d'augmenter la force constitutionnelle, de produire chez l'individu l'endurance, l'énergie, l'initiative, l'harmonie du corps et de l'esprit par la meilleure hygiène. En plein air, au canotage, qui exerce tous les muscles

du corps, à la natation, à l'équitation, à la danse, à la salle d'armes, on expliquera en même temps que les mouvements leur rôle ; quelques mots suffiront, on les dira et répétera, et même, pour le professeur, ce deviendra mécanique de compléter ainsi sa démonstration par ces rapides notions d'hygiène. Peut-être même celles-ci ne nuiront-elles pas au professeur lui-même, car cela lui évitera les exagérations de son art. Que de sports ont rendu peu endurants et fragiles de pauvres êtres trop entraînés sur un seul point. Que de fois, les médecins militaires ont pu, dans leurs recrues, constater la faiblesse de sportsmen distingués et la force d'individus à extérieur malingre et supportant bien la fatigue et la chaleur ! Tout cela, il le faut dire à l'enfant, c'est lui enseigner l'hygiène, et s'il a du goût pour un sport déterminé, lui montrer la nécessité de faire au moins quelque peu d'autres sports compensateurs et l'empêcher d'abuser de son sport favori.

Que l'enseignement de l'hygiène ainsi fait par morceaux, sans fatigue, sans effort, pour personne, soit profitable au plus haut degré, cela ne peut faire de doute pour personne. On sait aujourd'hui que plaisir et devoir se peuvent concilier : il n'y a qu'à faire aimer le devoir, ce qui est le rôle des maîtres en ne l'imposant pas comme un devoir mais comme un agrément. J'ai vu des enfants débiles que la promesse d'huile de foie de morue, cependant si désagréable à prendre, comblait d'aise. Si telle étude était présentée comme récompense, que n'obtiendrait-on pas des enfants !

Après le sport, la propreté qui débarrassera de la sueur et des poussières extérieures, sera un plaisir, si on la sait faire apprécier, non par un cours d'hygiène, mais par quelques mots suggestifs et des exemples.

Qu'il s'agisse des écoles et des collèges, ces rapides idées exposées par nous, s'appliquent aussi bien. On dose, on parle, on commente selon l'âge et le milieu de l'enfant. Pour l'enfant pauvre à entourage hygiénique peu favorable, on pourra redoubler ces enseignements faciles afin que lui-même soit plus prudent, plus propre, plus hygiénique et *plus hygiéniste*. Que d'enfants éduqués ont pu convertir peu à peu, sans paroles même, par leur seul exemple, l'entourage, l'ambiance ! On ne pense qu'à l'éducation des enfants par les parents, on ne pense pas assez à la répercussion possible de l'influence des enfants et de l'école sur les parents.

Pour l'*antialcoolisme*, l'enfant pourra être chez lui le porteur de la bonne parole. L'enseignement par l'image et par les exemples de la rue sera des plus simples à donner. Il convient que les maîtres de l'enfant soient tempérants ; certains disent abstinents.

Il est difficile de faire comprendre aux jeunes cerveaux ce que des hommes ont souvent de la peine à saisir et retenir : la différence entre la tempérance et l'abstinence relative, entre l'excès et l'usage.

Si les maîtres sont abstinents absolument, leur exemple aura plus de force. Mais ne peut-on être tempérant au maximum, sans pour cela, à moins que d'être malade, renoncer au vin par exemple, au vin édulcorant et colorant faiblement l'eau de la boisson des repas ? Ici le problème est des plus importants pour l'avenir de la race, que l'alcoolisme prépare à la tuberculose, à la folie, à la déchéance organique sous toutes ses formes. L'éducation jouera là un rôle plus grand que l'instruction. L'exemple est si contagieux pour les foules et les enfants en particulier ! Plus n'est besoin, hélas, de recourir à des esclaves, des ilotes ivres, pour inspirer à l'enfant l'horreur de l'ivrognerie ; partout, autour de lui, chez lui souvent,

il en verra ! Ce sera condamner son père, son frère aîné, sa mère peut-être. S'il répète chez lui les leçons de l'école dans ce domaine, on le raillera, on le contaminera : l'ivrogne n'aime pas boire seul et fait volontiers du prosélytisme. Que d'obstacles à vaincre dans cette campagne nécessaire contre l'alcoolisme ? Ne fait-on pas boire souvent l'enfant dans le " verre à papa," ce qui lui apprend peu à peu le goût et le besoin d'alcool ! Les difficultés seront plus grandes ici que dans le reste de l'hygiène, et cependant combien aussi important, combien indispensable l'enseignement de l'antialcoolisme ! Mais se heurter aux vices, aux habitudes pernicieuses et fatales du peuple, exige un tact, un doigté admirable pour le sauver—sous peine d'être contrecarré par les intéressés et d'avoir fait d'inutiles efforts. Il ne me paraît pas qu'on ait songé à ce côté de la question, et jusqu'ici on a plutôt prêché des convertis, des tempérants et des abstinents, qu'atteint les vrais alcooliques, les invétérés hôtes des cabarets, des bars. . .

Que dire en hygiène qui ne soit banal pour les initiés, et cependant combien tout est à dire, à répéter, à faire !

Pour conclure, en ces généralités rapides et brèves, je n'ai voulu qu'émettre quelques idées, surtout pour repousser l'enseignement didactique de l'hygiène dans les écoles et les collèges. Le gavage du cerveau, par la mémoire, est parfaitement inutile ; l'éducation et l'instruction par tous les sens sont préférables. Pour l'hygiène, ce n'est pas en des phrases, même lapidaires, qu'on la peut résumer et inculquer. Cet enseignement doit être de tous les instants, se faire à propos de tout, ce qui est vu, entendu, touché autour de soi. Ce sont les maîtres qu'il faut instruire dans ce sens, ou plutôt dont il faut simplement attirer l'attention, orienter l'esprit dans cette voie nouvelle, en somme bien facile à suivre.

Que l'image affichée dans l'école complète, mais qu'on la montre et commente ; sinon l'enfant s'habitue à la voir et n'en tirera nul profit. Que des images plus petites, des histoires avec peu ou point de paroles, comme les images d'Épinal, sur ces questions, lui soient données en récompense ; l'une vantera les bienfaits de la propreté par opposition à la malpropreté par des exemples tangibles et amusants ; une autre vantera la sobriété et l'opposera à l'ivrognerie. . . Que sais-je ?

Mais c'est ainsi, sans fatigue pour personne, ni pour les maîtres, ni pour les élèves, que je conçois l'enseignement profitable, salubre, indispensable, de l'hygiène dans les écoles et les collèges. Tous les maîtres seront ainsi des hygiénistes et des professeurs d'hygiène, et le seront toujours et à tout moment.

INSTRUCTION IN HYGIENE FOR TEACHERS IN SECONDARY SCHOOLS.

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THE desirability of, or the necessity for, instruction in hygiene for teachers of any grade of schools pre-supposes a broader and more humanistic idea of education than the one formerly held, or than that entertained by many intelligent people and educators even at the present time.

If education is considered in a narrow sense to be the imparting of knowledge or a detached process of intellectual development, then little place, if any, will be accorded to the part of the teachers' training suggested by the title of this paper. If, on the other hand, and in the light of modern science and philosophy, education is liberally defined as the preparation of the young person for life and all that it involves; if education is responsible in part for the development of racial, social, and economic efficiency; if, as contributory to these ends, education is concerned not only with the direct activities involved in the cultivation of motor, mental, and moral faculties, but also in the vital influence upon the individual, especially during the period of formal education, of bodily states and environmental conditions, then a very definite and dignified place must be given to the various phases of hygienic instruction which may be useful or essential to the teacher.

There is a growing conviction that at the foundation of the welfare of individual, home, community, and nation—judged from whatever rational standpoint—there lies first and always the element of biological fitness and efficiency.

Mankind cannot rise superior to or escape the operation of natural law. The human animal, to flourish at any level of civilisation, must conform to the same elemental principles of life and evolution which obtain everywhere in the world of living things. This conformity to biologic law must be made, moreover, the first conscious care of the responsible human being, and of those accountable for him until he reaches the age of self-direction. The development of the higher human consciousness is incompatible with the preservation of a safe, relatively unconscious instinct, which will guide the human creature in the paths of right living as it does the animals in nature. Moreover, the construction in civilization of a man-made environment with all of its complexity, changes completely the material conditions of life. A multitude of artificial factors have been added to the primitive natural conditions, and have rendered extraordinarily complex and dangerously confusing the problem and process of biologic adjustment. In spite of all these modifying circumstances there persists in all people, in varying degrees, through inheritance from an ancestry habituated to simple and uncomplicated existence, a dependence upon something beside rational care to conserve the biologic qualities, to protect the health of human beings.

Instinct, however, is a deteriorating faculty, and the human animal

blunders in the game of life. Intelligence, reason, and conscience develop slowly in their relation to the care of man himself. In the meantime, the human creature masters the world about him, and neglects his own kind. He knows less about human life and its adequate culture than he does concerning anything else, in the world, of value to him. Judged simply from the biological standpoint, man is organically the least sound and fit of all the species of animals. To provide the permanent foundations of the higher civilization of the future, it will be necessary for human beings, on the plane of conscious, rational control, to maintain as high a standard of life biologically considered, as do the animals instinctively in nature. The most vital of all the arts, and the last to be mastered by man will be the art of healthful, efficient living.

Adequate recognition of the importance of hygiene in education will be of slow development. Human well-being is the most valuable thing in the world, but civilisation is not yet far enough advanced to estimate all of its importance and relations. The worth of life and health cannot be measured justly by the present standards of value.

The human species, however, is awakening to its own biologic conditions and needs. The qualitative inferiority of people of to-day to their ancestors, and more even the consciousness of human failure to realise the best organic fitness, is wakening the thoughtful to a realisation of what is and what should be.

The hope of the race lies in the child biologically considered. The only justification for the existence of the adult is the care of the young. The child represents capacity, unrealised possibilities. The child is the potential parent of the next and of all future generations. The child is, first of all, an organism and should be made and kept, so far as may be with scientific care, a healthy organism. His chances for mental and moral development, for social, racial, and economic efficiency depend essentially upon his being a healthy organism. In all of this, health is not to be considered an end in itself, but it is every day being more clearly appreciated that health is an essential means to all human ends of admitted worth, and that it is an indispensable factor in modern education. At no period of life is it so important to guard and improve the health, the biologic power of the individual, as during the years before maturity. While the primary and natural responsibility for health, as well as other values, does and should fall upon the home, yet the State is bound for economic reasons, if for no higher ones, to supplement the care of the home wherever needed to prevent avoidable human failure and loss.

The most important agency at the command of the State for the conservation of child-life is education, and the teacher may be made, by proper preparation, a factor of inestimable value, not only for intellectual training of the young, but for the protection and culture of all the qualities desirable in complete education. While all teachers should be adequately instructed in hygiene, the teacher in the secondary school requires, if possible, the most thorough and comprehensive training in matters relating to health. This is due to the greater complexity of needs of pupils in the early adolescent period. Only the wise teacher of unusual training will resist the temptation to demand more energy for intellectual activity than the pupil can safely spare from the vitally important and rapid evolution which is going on throughout the entire organism. The

momentous changes belonging to this epoch oftentimes demand most of the vitality of the pupil, and formal education should be held in abeyance, in part or completely, until nature has prepared the individual by a vegetative process for the life of maturity and for the activities of formal education.

In adolescence the boy and girl are less susceptible to many acute diseases, but they are more liable to a multitude of errors and disorders of development. These are apt to be insidious in onset, not infrequently permanent in duration, and often more serious in their indirect effects than in tangible consequences. During this period of transition and confusing influences, the youth comes rapidly into the capacity for the feelings and ambitions of maturity, while the stability even of childhood is lost. It is the time of great plasticity, when the child is unfolding towards maturity; when youth is restless with possibilities; susceptible to all kinds of influences; subject quickly to vital changes, whether beneficial or harmful—destructive or constructive in effect. Nature is enlarging the organism, changing its structure and quality, modifying the relation of parts.

The heart, to cite one of many illustrations, is often left temporarily behind in development by the rest of the body during the period of most rapid growth. Its rhythm is easily disturbed, and, through imperfect circulation, all parts of the organism may be involved in this disordered equilibrium. Organs and functions, hitherto latent, gradually develop, and the most profound changes of all occur in consciousness. The brain, in fact, the entire nervous system, gains an increased sensitiveness, and a wider range of reactions and co-ordinations. At this period the intellectual interest, curiosity, and capacity of the pupil strikingly increase. New faculties and powers are born that broaden the foundations and increase the complexity of relations and interdependences between attributes which show variously, more of the physical, mental or ethical in their nature and expression. At this adolescent period exists the greatest sensitiveness of boy or girl to environment, to its impersonal or human elements. The teacher is always the most important factor in the educational environment of the pupil, and never so powerfully, perhaps, as in the secondary school. The very personality of the teacher has a primary importance, and the training of the teacher will determine in a marked degree how helpful and effective shall be the narrower or broader influence of this living environment upon the pupil's life and standards. At this most impressionable and critical period of life and development in the secondary school, attention to hygiene is of most vital importance if the biological values are to be conserved and irremediable errors avoided. This is the favourable time for the gradual inculcation of the principles and precepts of sound living in order that boys or girls may be prepared for self-guidance—to meet the increasing responsibilities which come in varying measure with increasing years. In adolescence, then, most of all, is instruction of the pupil in hygiene essential to the protection of health; to the balanced education of youth, and to the development of personal responsibility and self-control so necessary to moral training and the growth of character.

The teacher of the young at any period, and particularly in the elementary and secondary school should be primarily a trainer, protector, guide of children, and only secondarily a dispenser of information or a

teacher of subjects. Moreover, all the teachers who have to do with the education of pupils in the secondary schools should have a thorough grounding in the principles of hygiene. The teachers of special subjects who meet the pupils only for a short time, have less responsibility for health, but they should be intelligent enough to appreciate the general condition of the pupils, and to judge of the physical and psychical processes and reactions involved in the teaching of their specific subjects.

The teacher, on the other hand, who has the general oversight of pupils—the principal, supervisor or head master—has need of the broadest training and the largest wisdom with reference to all the range of the life and work of the pupils.

If the pupil is at boarding-school, this responsibility of the teacher unites that of the home and the school. Even in the day-school there should be more co-operation of home and school than has existed in the past. The child's welfare, and hence the success of education, makes it essential that the parent should be intelligently interested in the work of the school, and that the teacher should be informed concerning the home life and habits of the pupil, in order that his need and capacity may be better appreciated, and that the school may supplement in every way possible the ministry of the home, always to the utmost advantage of the child.

The adolescent pupil must be understood as standing at once at the end of the epoch of childhood and at the beginning of the significant preparation for maturity.

The teacher in secondary schools should have a thorough grounding in the principles of evolution. No person can really understand children and their growth, who does not understand the essential features of organic evolution. Then the scientific biological study of the child should include the anatomy and physiology of growth; the facts and laws of comparative development underlying the more immediate study of personal and school hygiene in all of their aspects. To understand the adolescent life, it is necessary for the properly trained teacher to be familiar with the laws of heredity and the characteristics of the different stages of infancy and childhood. Adolescence is simply one stage in a long and involved process of development. Clear knowledge of any part of this life-cycle necessitates recognition of its relation to what has gone before and to that which will come after. In the process of human evolution adolescence becomes constantly a more complicated and involved process.

The special study at present given to this phase of development and the accumulating literature upon this subject, attest the rapidly-growing recognition of its importance and complexity. Not only in its relation to other stages of development, but within its own range of phenomena and influences, it should be studied with great thoroughness, especially by the secondary school teacher.

It must be realised more also that adolescence is not determined by the exact age of the child, but represents a phase of development which may begin in individual cases any time within a considerable range of years, and may proceed more rapidly or more slowly and with varying degrees of complexity. The teacher, while trained to respect types and averages, should in practice be able to estimate the progress in development of each pupil. The teacher should keep in mind also, either con-

sciously or subconsciously, the essential unity of the child as a psychophysical organism, growing through contact with the surrounding environment, developing in accordance with the forces of heredity, but even more in accordance with opportunity offered by the surrounding world of the animate and inanimate.

The study of sanitation should come within the programme of the teacher's training, in order that the effect of environment upon organism may be accurately estimated, and that the pupil at the appropriate time may be so taught that he will be able to make the most successful mutual adjustment between himself and his surrounding world. The teacher is to judge of the child's educational progress, not so much by his ability to record his knowledge in speech or writing, as by larger action and conduct, by his attitude towards the world, by his reaction to the conditions which present themselves from day to day.

The most important duty of the teacher in the realm of hygiene is not to give the pupil instruction in health matters—though this is very essential, and at present largely neglected—but to see to it from day to day that the young person is in a normal, healthy state, looking out upon life with clear, eager vision, and reacting to the world of interesting things in a sane, wholesome way. This is all conditioned, at the foundation, on organic health and soundness, and it affects the entire life of the individual.

It cannot be taken for granted that the child is in the best organic state possible. It is the duty of education to know whether the pupil is in his or her best possible condition or not, and, if not, the reason for this should be determined.

With the positive abnormal problems the physicians will have much to do, but the teacher is on the watch-tower, and should be intelligently keen to give the signal when things go wrong, or better, when trouble of any kind is threatened. The teacher, therefore, should be keen to detect in the boy or girl departure from the normal state as evidenced either by the bodily indications of abnormal condition, or by the more subtle signs manifested in mentality or morale.

It is for this function primarily then that the teacher should be adequately prepared before undertaking, or being allowed to undertake, the professional task of education. The prospective teacher, in the study of school hygiene, should become familiar with the more tangible and the more subtle evidences of health and abnormality, and so develop an accurate, helpful judgment regarding the pupil's general organic state.

The "periodic biologic examinations," advocated recently by a medical authority, will become in the future a part of school administration, and serve as a basis for all the study and knowledge of the pupil's biologic state. While these periodic examinations should be made once a year, or in special cases, at more frequent intervals by qualified specialists, still it is important that the teacher should pass the pupils under review with practised eye from day to day and hour to hour with reference to noteworthy changes that may suddenly or gradually develop.

It may be said that this broad human care, this guardianship of health, properly belongs to the home, and that this phase of the child's care should be left to the parents. The answer is that the school should supplement the care of the home in the great task of making it possible

for the individual to realise his best self, his maximum power and efficiency. Education, in behalf of the State, of society in general, must be concerned fundamentally in this care of human life, in this economic protection of the most important form of wealth—the children of the nation.

If the teacher is thoroughly qualified to guard in all of these various ways the health of the boys and girls, to intelligently guide the pupil in a safe and profitable journey through this secondary school period, there will be abundant provision so far as knowledge goes for the satisfactory teaching of hygiene to the pupil.

The teacher with inspiring personality, keen insight, sound judgment, unselfish devotion in relation to the young, will be able to utilise the teaching of hygiene, not only for the pupil's self-protection, but as a means for broadening the intellectual horizon, for deepening the sense of social responsibility, and for the raising and strengthening of ethical ideals. Hygiene may be made one of the great humanistic studies. This instruction in hygiene should be determined in matter and method by the need of the growing child in his desire for information about life and health, and, according to his responsibility, for the care of himself or those about him. Hygiene should not be taught as a separate subject before the last year or two of the elementary school. It should, however, be constantly instilled into the mind and life of the child from the beginning of school life by the natural, logical application wherever reasonable opportunity may offer in the study of any subject. Such application will be made most readily and abundantly in nature study in its various aspects, and in the study of primitive and community life. Geography, history, and other subjects will also afford some chances for health teaching. Wherever the study of any fact or principle may be applied to human life or conduct, such applications should be made. Sympathy with such health-teaching, facility and tact in seizing the opportunity for helpful applications will determine largely the teacher's efficiency in the teaching of hygiene.

In the upper elementary grades and in the secondary schools, hygiene instruction should be given in a more formal and definite way, but here preferably through correlation, in part, with biology, domestic science, and in lesser degree with physics and chemistry. The more formal treatment of hygiene in the upper schools should never take the place entirely of the unforced and effective applications of any line of thought or interests to practical human living.

While the more definite health instruction will be given in class, in many instances the most vital help will reach the pupils individually from the teacher who is equal to the opportunity of the pupil's personal need, whether voiced or not.

Finally, instruction in hygiene for teachers in secondary schools should be accomplished by the provision of adequate courses dealing with the various phases of this subject in normal schools, colleges, universities—in short, in all institutions where such teachers are trained. From one-tenth to one-eighth of the time during two years of professional training of teachers should be devoted to the study of comparative development of children, of personal hygiene, school hygiene, and physical education.

Adequate preparation in hygiene should be required of all men and

women permitted to participate in the work of the school. The courses for teachers should deal thoroughly with matter and methods necessary for the supervision of boys and girls in the secondary schools, and for the direct and indirect teaching of hygiene. The sufficient and thorough instruction of teachers in hygiene will add, perhaps, to the length of professional training, or take some time now devoted to other subjects; but it will change the teachers' point of view profoundly, and increase immeasurably the proficiency of the teaching profession. It will invest the work of the teacher with new significance and dignity, and it must increase tremendously the efficiency of education in successfully preparing the young for the responsibilities of life.

INSTRUCTION IN HYGIENE FOR TEACHERS IN SECONDARY SCHOOLS.

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THE term Secondary School is of wide application, and covers educational institutions of very different aim and type. It is applied to the country grammar school, the city high school, the modern commercial or technical school, and the residential school. Strictly the name should be confined to those schools which educate pupils who have passed the primary or preparatory stage, and whose age is, approximately, thirteen to eighteen. But the majority of secondary schools have preparatory departments, and undertake the education of the young from the age of seven till the end of school life.

It is doubtful whether among all the various institutions—public and private—which may be classified by this name, any place is at present found in the curriculum for the direct teaching of Hygiene or the Laws of Health. It does not follow from this that the health of the pupils is neglected, or that they are kept in practical ignorance of the best ways of preserving health and attaining physical fitness for the battle of life.

On the contrary, many of the best secondary schools—and particularly those of the residential type—put the health of their pupils in the forefront, and claim to be organised in such a way as to promote physical well-being, vigour and efficiency. They give no formal lessons in Hygiene, but the whole life of the school is said to be one continual object-lesson in the Laws of Health.

It will be an advantage in this paper to divide secondary schools into two classes—(1) Residential or Boarding Schools; (2) Day Schools.

In the former, for a considerable part of the year the school performs the double function of school and home; in the latter the school merely shares with the home in the process and responsibility of education.

I.—THE RESIDENTIAL, OR BOARDING SCHOOL.

No one would be bold enough to deny that, on the whole, the pupils who have been educated at good English and Scottish Residential Schools are strong, vigorous young men and women, with healthy bodies and healthy minds. Our children leave these schools the finest animals in

the world ; and there is no reason to wonder at this. As a rule (though there are notable exceptions) the sites of these schools have been carefully chosen in salubrious districts, the rooms are airy and well lighted, there are baths, gymnasia and playing-fields ; games and physical exercises form an integral part of school-work ; there are specialists to give instruction in physical drill, and the advice of medical men is at the service of the headmaster. The pupils, unconsciously from their environment and the use and wont of their daily life, as well as through the influence of school tradition, develop a hygienic conscience or a hygienic taste which demands personal cleanliness, fresh air and wholesome activities. The tone and tradition, the law and life of the school, all educate in practical hygiene. Hygienic habits are formed, physical fitness becomes a cult, an object of veneration. All this is admirable. Can more be accomplished by introducing the direct teaching of Hygiene ? Is not the aim of such teaching—an aim too seldom realised—the formation of hygienic habits, and the living of a healthy life ?

I admit that it is better to have formed hygienic habits, even though there is no special knowledge of hygiene, than to have acquired a knowledge of hygiene without putting that knowledge into the practice of daily life. But is there any necessity for keeping practice apart from theory ? Might not the standard of healthy living which is already reached be further raised even in the best schools by some definite and direct instruction in the facts and principles of Hygiene, so that the pupils would have a scientific reason for the faith that is in them, and for the type of life which they are learning to adopt with enthusiasm ?

It is within my knowledge that, in an excellent residential school for girls—where the whole influence of the school tends to the upbuilding of a hygienic and strenuous habit of life—the majority of one class, whose ages averaged sixteen to seventeen, were recently unable to tell which of our organs is specially concerned with the function of breathing. And similar ignorance is prevalent among boys. Is there any sufficient reason why such simple knowledge should be confined to children taught in elementary schools ? Would the love of fresh air and cold water, of sunlight and of games, be lessened in the pupils of these schools by a knowledge of the simple facts and principles upon which the laws of health are founded ?

I am aware that some people have expressed a doubt about the value or desirableness of instruction in elementary physiology and hygiene. "The study of these things," they say, "is not for the young. It tends to self-consciousness and morbidness, and spoils the joyous activity of youth. Let the children have healthful surroundings, develop in them an appetite for fresh air, personal cleanliness, and active exercise, and let the unwritten law of the school mould them to regular habits, and you achieve greater results than by any amount of instruction in physiological facts and hygienic principles."

But, again I ask—Why not add the instruction to the habituation ; why not enlighten the practice by the theory ? A good habit is all the stronger if it is based upon or supported by knowledge. To deny this is to glorify the old rule-of-thumb method, which, as Matthew Arnold pointed out, has cost the country so much.

Even in the best schools there are dangers arising from ignorance. Few masters or mistresses take the trouble to make themselves

thoroughly acquainted with the principles of personal and school Hygiene. Still fewer have had any training in the physical or psychological observation of children, or have learned the meaning of the numerous signs and symptoms which tell so much about the child to the eye that has been trained to see. In few secondary schools is there any preliminary medical examination, or any expert inquiry as to how far games and exercises—or certain kinds of them—are likely to be beneficial or hurtful to individual pupils. In one school physical exercise may be given to excess, in another it may not be given sufficiently or at the proper time. “All the pupils must take part in the games,” said one head to a friend of mine who was making enquiries about the school. But no steps were taken to find out whether in so doing this or that individual pupil would not thereby be seriously injured in health. There is, moreover, owing to the modern cult of athleticism, an overpressure on the athletic, as well as an overpressure on the intellectual side, and in many schools the danger lies in the former direction. I have known cases of complete physical exhaustion brought about by this athletic overpressure. Such cases are most often found in schools for girls. It is hygienically wrong, for example, to make a young girl who has been doing school-work of various kinds during the whole morning and afternoon, stand on her feet for three continuous hours (from four to seven) as umpire in a House cricket match. And it is worse than foolish to expect that after such a physical strain the girl should be capable of sitting down to two hours of school preparation for the next day. Yet this is not a mythical case.

Sometimes “a little knowledge” is the dangerous thing. I have known of the younger children in a high-class school sitting at their lessons in a room where the temperature was about 40 deg. F. The strain on their vitality was considerable, but the head of the school tried to justify the arrangement by quoting from the book of some medical authority, who stated that the temperature of the class-room should be just a few degrees higher than the temperature outside. It was no wonder that nearly all the younger pupils of the school suffered severely from chilblains.

A school, like an individual, may have the faults of its virtues. Even the athletic and strenuous tone of a school may be a source of danger. This is especially the case where for moral reasons there is such an anxiety to have every minute of the day employed, that no time is left for rest and recuperation, and the time for food and sleep is unduly shortened.

Time is not misspent which allows children to eat slowly and masticate thoroughly, or to have their full share of sleep. The proper rhythmic relation between exercise and rest must be maintained in order to secure healthy growth and consolidation of strength.

II.—DAY SCHOOLS.

It is not merely in the elementary school that instruction in the laws of health is required. It may be granted that the conditions of life at home are more favourable to the children who attend secondary schools, but at the same time it must be remembered that, on the whole, the strain of school-work is much heavier.

The demands on the attention are greater with subjects like Classics

and Mathematics ; there is usually a severer burden of home lessons ; the eyes have more work to do in the way of reading, and there is a greater call for continuous sitting work both at school and at home. Competition for prizes, bursaries, and scholarships is often very intense. Ambitious parents and ambitious teachers encourage the pupils to severe and long-sustained efforts. The prizes which the future has to offer often outweigh all considerations of health.

Is there room in the crowded time-table of the secondary day school for Hygiene ? The answer of most people who know anything about the present congested condition of the curriculum, and the eagerness with which the representatives of each subject clamour for more time, will doubtless be a prompt and decisive negative. And yet I am disposed to think not only that the subject needs attention in the secondary school, but that time may be found for teaching it—both directly and indirectly—without encroaching upon the time which is due to other subjects.

SUGGESTIONS AS TO THE TEACHING OF HYGIENE.

1. It seems to me that the first requirement as to Hygienic teaching in the secondary school is that every teacher, no matter what his subject may be, should be required to undergo a professional training, and that part of this training should be a course of theoretical and practical instruction in personal and school Hygiene—that is, in the Laws of Health and their application to the lives of children in school, and in the physical observation of children under school conditions. In secondary schools the teachers are usually experts in certain subjects, and are responsible for the work in their own department. Thus, if they received such a training as I have mentioned, every teacher might, by personal example and interest, by his method of class-room management, by adapting general school regulations to individual requirements, contribute to the quickening of the hygienic sense, and the formation of hygienic habits of work throughout the school. One effect of this training would be to check the natural tendency of each master to lay too heavy a burden of home-work upon his pupils, and to encourage the members of the staff to come to a mutual agreement as to the proper amount of home preparation. In such an agreement the health and physical well-being of the pupils would be considered as well as their academic success.

It is a matter of great satisfaction that I am able to refer to such a regulation about professional training as I have spoken of as the first requirement. In the scheme for the professional training of secondary teachers which has recently been adopted by the Joint Committee of the four University Training Centres in Scotland the regulation is given on page 5.

“The course of professional training shall include attendance at an approved course of instruction in personal and school hygiene, to extend over a period of two terms of at least ten weeks each, and to include not less than thirty and not more than fifty hours’ instruction.”

It is worth noting that this course of instruction is meant to include not merely *lectures* on Hygiene, but visitation of schools and examination of the buildings and equipment from a hygienic point of view ; also the physical observation of children, and the use of simple tests for sight, hearing, etc.

The course is to be kept in close touch with the actualities of school life. Theory is not to be divorced from practice.

In these training centres special medical officers have been appointed whose duty is to give the lectures and demonstrations to the students, and conduct the clinical instruction in the schools.

As physical exercises are now looked upon as part of school Hygiene, these medical officers are to be the responsible advisers of the physical instructors, and the arrangements for physical training are to be under their supervision and control.

The whole time of these medical men is to be devoted to this work.

Another regulation of this scheme makes attendance at an approved course in psychology compulsory, and specially includes instruction in the psychological observation of children. Good health has its mental as well as its physical manifestations, and the teacher is to be taught to observe both in a scientific spirit. He will learn in this way to relate physical and psychical or moral phenomena as they are presented to him in the class-room, and the whole plane of school teaching will gradually be raised.

DIRECT TEACHING.

2. In all good secondary schools there are now instructors in physical training. The qualifications of these instructors are, in many cases, very high. The days of the drill-sergeant are passing or past. One important part of the training in a physical college is careful instruction in Hygiene and the Laws of Health. It seems to me the natural arrangement that these highly-qualified teachers should be made responsible for the direct teaching of Hygiene in the secondary schools. Their instruction should be graded from simple and short elementary lessons in the early years of school life, to more definite teaching for the older pupils. The lessons need never be long, and they could be given immediately before or after the practical instruction in exercises and games, which at present constitutes all their work. If there were a medical officer connected with the school, it would be an additional advantage if he could give a few practical hints once or twice a year to the senior form. All the physical and hygienic instruction should be under his careful supervision.

It is to be hoped that men will begin to qualify themselves for the higher physical training, as women are now doing in great numbers.

INCIDENTAL TEACHING.

3. In addition to the direct teaching of Hygiene just referred to, some valuable sidelights on the subject might be provided in connection with the teaching of science. For example, in dealing with physics, the principles of ventilation could be illustrated, and in dealing with biology much valuable information might be given as to the working of the human organism, its growth and its needs.

As I have already suggested, if all teachers were instructed in Hygiene as part of their professional training, then incidentally in every class-room many valuable hints might be given calculated to deepen the effect of the direct teaching, and show its application to the every-day work and life of the pupils.

Lastly, it is the excellent custom of some headmasters and headmistresses to have occasional quiet talks with their senior pupils on matters of importance. These talks, being less formal than ordinary lessons, often carry greater weight. Such talks from a wise head might be most effective in dealing with the great but delicate borderland between Hygiene and Morality, Hygiene and Character, Hygiene and Religion.

There is a Hygiene of mind as well as a Hygiene of body. These are not disconnected. The wise teacher, if well trained, will find means of making his teaching bear upon life, and promote the acquirement by his pupils of the "sound mind in the sound body," of the "clean hands and the pure heart."

Professor C. S. SHERRINGTON, F.R.S. (Liverpool): Instruction for teachers is necessary in both primary and secondary schools. The difficulty is very small where the teacher's training has included to some extent physics, chemistry, and especially biology. Even an elementary knowledge of the principles of health (physiology) is of the greatest help as a foundation to the practice of hygiene and its application in the school. The knowledge of hygiene is especially important for those who conduct residential schools and have the feeding and sleeping rooms of the pupils under their charge. The universities should provide courses in the principles of health and personal and school hygiene suitable for those students who are taking up the profession of teaching.

Miss W. L. BOYS SMITH (Cheltenham) considered that direct physiological teaching should not be commenced too early. Some hygienic laws may be taught with advantage, but the principles of hygienic life are best instilled by making children live such lives. During the training of young teachers, direct teaching should be given. The study should be based on physiology, and two years' study allowed. A minimum would be a year's course; two hours a week for three terms (of twelve weeks), half to physiology and half to hygiene, together with some very necessary practical demonstrations, in addition to the suggested time. She has invariably found great interest aroused, and the desire for further knowledge. Good apparatus, diagrams and models are required.

Miss ETHEL HURLBATT (McGill University, Canada): The time has come for universities and centres of higher learning to provide adequate courses of instruction and facilities for the study of hygiene and domestic science, as they now do, *e.g.*, for commerce. Women have gained enormously in mind and body by the opportunities for sharing in intellectual training afforded in recent years. Every university woman should now realise two great responsibilities in promoting health, first to maintain her own physical efficiency, and full mental and moral powers, and to see that no woman coming within her sphere of influence suffers from overpressure; secondly, to urge that a place be given in universities to the higher study of hygiene and domestic science; not to supersede her share in university teaching in arts or science, but in order that these subjects may receive scientific treatment.

Sir WILLIAM COLLINS (London), in summing up, said that, in his opening remarks, he had expressed the hope that the discussion of the teaching of hygiene might be dealt with on the broadest lines and from the widest aspect. The discussion of that morning had fully realised that hope. Not only had representatives of many countries and peoples been heard, but also many different types of thought had been voiced. The rôle of the doctor, of the university and of the State had all been brought under review. Some had suggested that doctors were required to teach, others hinted that doctors required to learn; some had looked to the State as the source from which all reform should proceed; others had clearly indicated their distrust of State action in such questions. Some, again, had invoked the aid of the university as stimulating attention in the higher teaching of hygiene, while others had dwelt on the need of practical attention to the most elementary

details. As to the doctor, of course, hygiene aimed at a state of things in which doctors will neither be able to live—nor die ; they were accordingly by some regarded as suspect in the propagation of hygienic laws. He (Sir William Collins) thought that it would be true to say that the knowledge which a doctor ought to possess was most valuable, indeed essential, for the teaching of hygiene ; it is probably also true that the possession of such knowledge alone does not constitute adequate qualification for a teacher of hygiene.

He agreed with those who said it was undesirable to introduce outside specialists to impart such instruction, since, as he had stated in his opening address, we are dealing with inculcation of habit and formation of character, and such teaching should permeate the whole curriculum. He agreed with Miss Hurlbatt that the teaching of any subject was not apt to be regarded seriously unless the university took it up ; he also agreed that the university should have regard to the distribution as well as to the production of knowledge. While aiming at enlarging the boundaries of knowledge and raising the ideal, we must not neglect the supremely and immediately practical. Thus, in the debates in the House of Commons on medical inspection, it appeared to him rather visionary to talk about anthropometrical surveys while we were being reminded that in some public schools, 40, 50 and 60 per cent. of the children presented heads that were verminous or otherwise offensive. He was glad to state that, as one of the Chadwick trustees and a member of the Senate of the University, an arrangement was on foot for establishing a professorship of hygiene in the University of London.

THE TEACHING OF HYGIENE IN PRIMARY SCHOOLS.

By RICHARD CATON, M.D., LL.D., F.R.C.P., J.P.,

Consulting Physician, Liverpool Royal Infirmary ; Member of Liverpool Education Committee.

THE problem of arresting the physical decadence and degeneracy which are manifest in our town populations has from several points of view urgent importance. It is not likely to be solved merely by sanitary legislation, by the provision of water supply and good drainage, by the prevention of overcrowding, or by the provision of hospitals. In addition to these valuable measures, it is necessary that the habits of life of the town-dweller be amended, and that we enlist the people themselves in the strife against disease and death.

Everyone knows that the technical details of each trade or calling have to be learnt ; that the carpenter, the seaman, or the stonemason, has to learn, during an apprenticeship of years, the methods of his craft. But unhappily not everyone realises that the due ordering of human life, the conduct of a household, the bringing up of children, amid the difficulties of city environment, are also important and difficult arts, not to be entered upon without knowledge and preparation.

Unhappily multitudes of people enter upon domestic life wholly unprepared, with suffering to themselves and decadence and degeneracy among their offspring.

Nearly forty years' daily work as a hospital physician, also a somewhat intimate acquaintance with the homes of the poor, gained in part through my experience as chairman of the Housing Committee in a great city, have shown me how grave are the mistakes, the errors, and prejudices which prevail, and how disastrous these mistaken beliefs are in their influence on child life as well as on the health of adults. Ignorance as to the value of a pure atmosphere in the dwelling-house, the too frequent tolerance of dirt, the disbelief in the value of water as a drink, the widespread delusion that alcohol and tea are valuable forms of nourishment for children and adults, together with other grave errors as to the dieting and bringing up of the young, are only a few of the many mistakes and ignorances which have so disastrous an effect on the lives of our people. How are we to uproot these mistaken habits and usages, and to instil a knowledge of truer modes of living?

In order to do this we must bring our teaching to bear on the young; it is easier to guide them into the right paths.

I believe that of all methods for securing this reform the best is sanitary instruction through the agency of primary schools. As a member of a large education authority, I am confident that, while our schools are doing already much to prepare the children for the life before them, by certain amendments in the curriculum, we might greatly increase their good influence. The teaching at present given does not bear upon the daily lives of the people so closely as it might do. The people have never been taught how to live, how to secure health and physical vigour for themselves and for their children, and how to avoid disease.

The simple principles of hygiene can readily be taught to boys and girls of the seventh, sixth and fifth standards. The moderate degree of education needed for the comprehension of the subject is possessed by those who have undergone this amount of instruction.

The teaching needed for purposes of health is simple, and as it deals with familiar matters of everyday life, it is easy to comprehend, it arrests attention and awakens interest.

The schoolgirl knows very well what a baby is. She has often watched and tended one in a more or less careful and judicious manner. She knows what a troublesome inmate of the cottage a young child can be when sleepless and ailing from bad management, and she has, in too many instances, seen a child die. Any simple and authoritative teaching on a subject so familiar and so interesting to her, if it be strongly impressed upon her mind during the latter part of her school life, is likely to be remembered and to influence her conduct at a later period.

Scarcely anything can be more practically useful to the boy or girl than to know that alcohol is not a food, that it much more often is a poison (especially in the form of the strong and cheap beer and spirits bought by the poor), that it gives no strength for labour, and brings in its train too often ruin to mind, body and estate.

The boy and the girl have not usually come under the spell of this destroyer; they can be warned in time, and if so warned are much less likely to succumb. They should be told that the misery, the vice and crime, the wrecked homes, they have witnessed from this cause are not matters of necessity at all; that such scenes are not normal human life, but a dreadful perversion of it which they themselves can escape if they have the requisite knowledge and common-sense.

I do not write this in the spirit of a fanatic ; I am not even a total abstainer myself ; but I believe that it is impossible for anyone who has had an intimate acquaintance with the life and the homes of the poor to entertain any other view of the importance and the urgency of the problem of alcoholism among the masses of the people.

Then, unhappily, too often the man and the woman who are wise enough to shun alcohol run through ignorance into the lesser but still disastrous error of excess in tea-drinking. The strong, stewed, tannin-laden tea which too many of the poor drink brings on stomach troubles and anæmia, together with nervous complaints, especially in women, and these, again, sometimes produce a craving for the dose of alcohol which seems to give a temporary relief. Thus a vicious circle is established. I do not state this as a matter of theory, but as the result of personal experience of multitudes of cases.

Our elder children ought to be warned of these pitfalls in their path, that they themselves may lead wiser and happier lives.

Is it not almost criminal that the State, which undertakes the education of the people, should neglect this most practical and important department ?

I say there is scarcely any conceivable form of knowledge which is of more practical importance to the people than this which we desire to give them ; they have a right to it, and I believe if it is placed before them in a suitable way they will value it highly. Thus we shall diffuse through the population a knowledge of the simple principles of hygiene.

In Liverpool this form of teaching has been begun, though as yet only amongst the girls ; all in the fifth and higher standards are taught it ; and we have been much gratified to note the keenness and intelligence with which these pupils of the upper standards acquire this most valuable kind of knowledge.

In order, however, that the teaching may be practical and in all respects satisfactory, it is necessary that the teachers should receive some special training in the subject. It is therefore essential that the Education department should make suitable provision for the training of teachers, and should then render this form of instruction compulsory for the higher standards of our primary schools everywhere.

We must enforce the consideration of these principles upon the Education department. It is not always easy to make the officials of the Government service understand the facts as they exist. Their walk of life naturally has not brought them into familiarity with the lives and habits of the poor. Had they the intimate knowledge which some of us possess they would feel this question to be of the gravest importance. Not having this knowledge, they are apt to regard new views of this kind as fads, as mere eccentricities, having no real bearing or basis of common-sense in relation to existing problems.

The main object of national education is to produce good citizens, to give a preparation for life. Surely the care and preservation of life itself, the training of the body in health and vigour, the wise management of the young, enabling them to have a fair start in life with the precious gifts of physical and mental vigour as their heritage, should be a primary object of all education, enabling our people to make the most and the best of life alike in a moral, an intellectual and a physical direction.

One of the great advantages of an international assembly like the present lies in the fact that it must show the educational departments how widespread is the belief that the teaching of hygiene is an essential for the well-being of the masses of the people; that the great duty of the present time is prevention of evil and not merely its cure, and that such prevention is in a large degree practicable.

Perhaps some members of the German "Gesellschaft für Verbreitung von Volksbildung" are present to-day. That excellent organisation is spreading gratuitously in German schools and among the people, in hundreds of thousands, a small pamphlet entitled "Wie erhält man sich gesund und erwerbsfähig?" a simple manual of hygiene, in English, "How to be healthy and fit for work?" It is similar to my little pamphlet, "How to Live," which is being distributed in a somewhat similar way.

Other nations, such as the United States, recognise the importance of this form of instruction; let us hope our own country will soon follow their example.

May I venture to offer copies of these two pamphlets to members of this section?

THE PRACTICAL TRAINING OF TEACHERS IN SCHOOL HYGIENE.

By PROF. CARSTAIRS C. DOUGLAS, M.D., D.Sc., Glasgow.

It is clearly recognised that, in the matter of looking after the health of the child, the elementary school teacher plays an important part. This being so, the teachers must be trained in hygiene on lines suited to their future professional work. That there is not unanimity on this point is shown by the fact that there are a number of different syllabuses of instruction in the laws of health for teachers in training, varying from one another in certain important points. Some courses give too much elementary anatomy and physiology, others too much sanitation, while many are noticeably deficient in practical work. In my opinion the anatomy and physiology should be largely cut down, sanitation restricted to that of schools, and the greater part of the time of lecturing devoted to a consideration of the effects of school life upon the different physiological systems of the child, and of the attendant pathology of childhood in so far as it comes into relation to the school. Ventilation, feeding and clothing, attitude and posture, sight and hearing, minor ailments and infectious complaints, with thoroughly practical teaching on each of them, are what should occupy the greater part of the lecture course. These lectures must further be supplemented by some definitely practical work, something corresponding to clinical work in the medical curriculum, if the teacher is to reap real benefit from the course of lectures prescribed.

The curriculum which appears to me to meet the requirements of the case is of the kind which is carried out under the Provincial Com-

mittee for the training of teachers in Glasgow. In the session which ended a month ago there were ninety students attending my course of instruction on the laws of health—a course which, since its initiation three years ago, has been a happy combination of theory and practice.

The whole class meets for the systematic lectures, at which only so much anatomy and physiology are given as suffice for a sound grasp of the elementary principles and practice of school hygiene. It is found convenient to deal with the circulatory system first, emphasising the differences that exist in it between adult and child life. A study of respiration follows, leading naturally to a consideration of the vitiation of air in classrooms by breathing and by lights, and to the study of the principles and practice of ventilation. In order now that practical work may be commenced, a lecture is next devoted to a description of the school building as a whole, special attention being paid to such points as floor area and cubic capacity per child, ventilation, heating and lighting, sanitary conveniences and the like.

Then follows an account of food-stuffs and their functions, the physiology of digestion, and the important subject of the feeding of young children, both before and during school age. Improper feeding and its consequences are touched on, and tables supplied giving the normal height and weight of school children. The skin and the teeth are treated of, and the means by which the body rids itself of its waste. Attention is now given to the nervous and muscular systems, and to the general effects of physical exercises, without at this stage entering into details of individual exercises, the muscles employed in them, or their special effects. Fatigue both of body and brain is dealt with, and the importance of long hours of sleep for young children insisted on. Time is also given to a consideration of such matters as juvenile smoking and the teaching of temperance and hygiene to school children.

The structure of the eye and physiology of vision are subjects which always arouse the students' interest, and the important matter of eyesight in school life is fully considered. The ear and hearing receive similar attention, while the matter of enlarged tonsils and adenoid growths is not forgotten. The ordinary infectious illnesses and tuberculosis among school children are fully treated of, and the important subject of rheumatism is not omitted. The course ends with lectures devoted to a detailed consideration of the anatomical and physiological principles underlying the exercises of the physical code. The great individual muscles of the back and chest, shoulders, arms, legs and abdomen are studied, the points of origin and insertion of each being given, as well, of course, as their action or actions. Finally, the movements rather than the muscles are studied, and for each special movement the muscles are enumerated which aid in its performance. It is recognised that the treatment of remediable bodily deformities in school children rests almost entirely on physical exercises, and it is considered all-important that every teacher should have a proper grasp of the rationale of each exercise.

We now come to the important question of the practical work correlated to these lectures. For this the class is subdivided into groups, each group containing from twenty to twenty-four students. During the past session four such groups were dealt with, and, as the whole class met one day a week for the lectures, one of each of the four remaining

working days was allotted to a group for practical instruction. Glasgow is rich in good elementary schools, some of them being of the very best modern design, and built with the closest regard to the health of the scholars. After three systematic lectures the practical work begins. A modern school convenient to the University is selected, and each section of the class in rotation visits it under my personal guidance, and goes over every detail of structure and arrangement which it is important the students should know. The systems of ventilation, heating and lighting receive detailed attention, criticism is passed on them if need be, and other modes suggested and discussed. The students in turn are made to measure the area of classrooms, ascertain the ceiling height and calculate the cubic capacity, as well as to measure the window area and determine its ratio to that of the floor. A sort of informal oral examination is carried on during the whole visit, which lasts an hour. If there are *annexa* connected with the school, such as baths, cookery-room, workshop and gymnasium, these are thoroughly explored also.

Having studied the environment of the child in school hours, we now turn to the child itself. The writer selects an elementary school on the confines between an artisan and small shopkeeper district, and one which is essentially poor and congested. This affords a good and varied selection of types. Before the sections meet again for practical work, the lecturer has visited the school and picked out groups of children for demonstration. The students on this occasion are to weigh and measure the children and ascertain chest capacity. Accordingly boys and girls of, say, six, seven, eight and nine years of age are selected, both of normal appearance and of distinctly inferior physique. These are arranged in groups on one side of an empty classroom, while the other side is occupied by the students of that section. Each child carries a slip of paper bearing its age. This saves time in the way of asking questions. In the floor space is a black board, a lever weighing-machine, weighing to quarter-pounds, a measuring stand graduated to inches and tenths, and ordinary tape measures for getting chest size. Every student is taught to weigh and measure accurately, and the results are tabulated on the board and compared with those from standard tables. In this way the young teacher gains a definite idea of the physical characters of the normal and abnormal child, and in addition acquires the practical knowledge needed for obtaining physical data. We next proceed to study more particularly the underfed and weakly child, selected types being chosen for this purpose. Special attention is directed to the condition of the bones, and the early or the persistent evidences of rickets are clearly pointed out. The enlarged head with frontal bosses, the thickened epiphyses at wrist and knee, the tibial curving, and the heading on the ribs can, unfortunately, be demonstrated only too easily in any school in a poor quarter of Glasgow.

The teachers, by actual handling, are made to satisfy themselves on these various points. The effects of bad past feeding and present insufficient nourishment upon the body generally are demonstrated, especially in reference to feeble muscular development and to the existence of anæmia. The student is taught that muscles readily respond to stimuli and undergo healthy hypertrophy, but only as long as a sufficient amount of nourishment is provided. To expect the underfed child to do

the same physical drill as his stronger better nourished brother is in entire contradiction to the doctrine of the conservation of energy.

On other meetings the students have the opportunity of becoming acquainted at first hand with other bodily defects or blemishes. Children are shown and studied illustrating the effects of bad posture on the spine, ribs, breast-bone and pelvis, and the beneficial effect which physical exercises have on these, as well as on flat-foot and other conditions, is made clear. Enlargement of glands in the neck receives attention, and emphasis is laid on the frequency with which tubercular infection is responsible for them. This leads naturally to a consideration of the whole subject of tuberculosis in school life, with special reference to modes of infection.

It is not difficult to find children who are mouth-breathers, and who illustrate typically the facies of those who suffer from nasal obstruction and enlarged tonsils. The question of adenoid disease and tonsillar hypertrophy can thus be treated of, and the effects of their existence on speech can be appreciated. The importance and value of nose-breathing is insisted on. The care of the skin and hair forms an essential item in practical school hygiene, and most schools unfortunately provide examples of children where cleanliness of skin and clothing is deficient. The same thing applies to the teeth.

The eyesight of school children constitutes a matter of the most serious character and one well fitted for practical teaching. This can be done in two different ways. (1) By indicating in the classrooms the conditions which favour ocular defects, and which accordingly the young teacher must avoid or try to correct, as for example, bad lighting, bad type and poor paper in books; seats so constructed that the pupil is too far from the desk; inefficient means of ventilation whereby the room becomes too hot and so on. (2) By giving practical lessons in testing the children's eyesight by means of a Snellen test-card read at 20 feet (6 metres), and showing how to fill up the proper form for the vision of right and left eye respectively. The reason why more children show defective vision when tested in this way than when examined by retinoscopy is explained. This part of the practical course is regarded as a very important one, for if every teacher at the beginning of the session examined the scholars in this way they would very quickly find out those with poor sight, whose parents would then be notified. The children could be examined at one of the eye hospitals and suitable glasses provided. It is part of the teacher's duty to see that these glasses are worn.

In close propinquity to one of the schools where these demonstrations are given there are departments for children physically and mentally defective. Each of these is visited by the students and studied with interest and profit. Among the physically weak we find certain groups of children suffering from different diseases. Here, for example, the students will see cases of rickets of such severity and degree that the victims are mere dwarfs, in some cases quite unable to walk, yet all suffering from a *preventable* disease. Here also are found examples of the tubercular, where bones or joints have suffered markedly. In some there is strumous dactylitis, in others the wrist is ankylosed, and a good many are permanently lame from ordinary hip-joint disease. A third group comprises those suffering from various forms of paralysis, either birth palsies or infantile paralysis. We have in this school too

some children affected with grave cardiac lesions, usually rheumatic in origin, whose early manifestations were regarded simply as growing pains. Another group of children show marked spinal deformity, chiefly upper dorsal kyphosis, or a lordosis. These conditions may not have arisen actually in school life, but their continuance is much fostered by bad postures. This department also embraces the epileptics, whose mental powers are good, but whose bodily affliction unfits them for life in an ordinary school. In actual teaching I seat the section of students so as to enclose three sides of a square, there being seven or eight students per side, while the lecturer sits on the fourth side. Selected types of the above-mentioned morbid conditions are then brought in to the central space and the hour's work begins. The students have by this time learned to observe for themselves, and accordingly, in the case of each child, a record is obtained from the students as to what they see in the way of departure from the normal. The child is made to walk, bend, etc., the young teachers use their eyes and tell the lecturer what they consider amiss. Stress is laid on the origin of the conditions observed, and the various factors that have contributed to their development, with the special object of impressing on young teachers the importance of preventive measures. Rheumatism, tuberculosis, postural deformities may all actually arise during school life, and their incidence and complications may be materially affected by the vigilance of the well-trained teacher. The onset of infantile and birth paralysis, as well as of epilepsy, is entirely beyond the teacher's control, while rickets also has commenced before school life. As the latter, however, is essentially due to errors in feeding *plus* defective hygienic conditions at home, the teacher is impressed with the necessity of training the present girl pupils—the future wives and mothers—in such a way as to limit the extent of the disease in the next generation. I regard these visits to the crippled children as of much educational value, as they lead the teacher to realise to what deplorable lengths such conditions of ill-health in childhood may go, how much is really preventable, and thus it may be their happy lot to contribute to its diminution.

If time permit, a similar visit is paid to the mentally defective. The clinics here are interesting, but perhaps hardly so valuable as those on the physically incompetent, as the mentally weak do not appear so often in the ordinary school. Still much that is of value may be learned from them.

It is not enough, however, in the training of teachers, to give demonstrations and clinics alone; as already pointed out, it is essential that those trained should observe and record for themselves. In particular, in the latter half of the past session, I have paid more attention to this feature, and have obtained from the students physical data derived from their own observations. Dr. Leslie Mackenzie has strongly insisted upon this in a report presented to Parliament in spring of this year on "The Teaching of School and Personal Hygiene to Students in Training as Teachers in Scotland." By adopting a plan of teaching based on the lines he suggests, the students, by the end of their course, can give a very fair account of the general state of a child—height, weight, chest measurement, vision, hearing and general nutrition, condition of the skin, teeth and hair, and so on. Their observations may be incomplete, may, indeed, be incorrect, but they are at least made by themselves.

and constitute a valuable training with reference to the future profession of those taught.

Such is an outline of the course I have so far carried on. It can be improved in various ways. For one thing more time is needed, so that certain parts can be studied with greater leisure and in greater detail. In addition to this, it would be well to correlate it to the course on physical training, as in the latter lies the remedy for not a few of the morbid conditions which the course in school hygiene reveals. But even as it stands it is calculated, I believe, to give the students an elementary yet really useful knowledge of personal and school hygiene. I have insisted on the practical side of the work, for teaching of this kind is of next to no use if it is only theoretical. Those young men and women will shortly be engaged in actual work, dealing with large numbers of children. It is of no great importance then to remember how many ferments the pancreatic juice contains, or how many muscles move the eyeball. What they must know is how to recognise the early signs of the commoner infectious diseases, the presence of ordinary skin parasites, the indications of fatigue, and the presence of ocular defects. They must certainly know a reasonable amount of elementary anatomy and physiology, both that they may understand the principles underlying hygiene, and that they may be qualified to give elementary instruction in the laws of health to their pupils. The essential feature, however, must be the practical nature of the training, and I believe that this essential will be obtained by courses of instruction modelled on the lines I have just sketched.

THE TRAINING OF TEACHERS IN ELEMENTARY SCHOOLS.

By K. A. KNUDSEN,

States Inspector of Gymnastics for Denmark.

THE question considered in this paper is that of the instruction of our coming teachers in Hygiene and in the Anatomy and Physiology necessary as a basis for this study.

Although Hygiene is a comparatively new subject in the schools, its title to a place in the school curriculum is nevertheless universally acknowledged, and this especially in the case of training colleges.

The future teacher must have some knowledge of the child's physical life, for no matter what subject he teaches the whole being of the child, physical as well as mental, is under his influence.

Mental work is dependent for its accomplishment upon the bodily organs, and in order to promote the welfare of the mind it is necessary at the same time to seek for the welfare of the body.

The condition of the body has far-reaching consequences in the whole realm of the mind. The mental abilities are developed more vigorously and more fruitfully in the good soil of a hardy, healthy body.

Every teacher ought, therefore, to know what is due to the child's body during the time he is busy developing its mental powers. He should

realise that mental development is most perfectly attained when at the same time the physical development is adequately provided for, and that by physical training we can reach the spiritual life of the child from a side which is less easily and satisfactorily approached through intellectual subjects—a fact which Englishmen, with their love of sports and games, are not likely to lose sight of.

The teacher should bear in mind the words of Roussseau: "A weak body weakens the character," and that this is specially applicable as regards the child, whose mind is much more alive to physical influences than is the case with an older person.

How, then, shall this instruction in hygiene be given to the future teacher, and by whom?

All agree that it should not be presented to him as a set of rules divested of the reasons upon which they are grounded. He must understand why these rules are laid down, if their importance is to touch him with a sense of actuality, otherwise he cannot have that conviction of their truth, which is necessary, if he himself is to live up to them, and, still more, to get others to do so. These rules should, therefore, be based upon Anatomy and Physiology.

In the Danish training colleges up to the present time Hygiene has been taken partly under the subject of Pedagogics and partly under Natural History; but in later years it has come more and more to be considered in connection with Gymnastics, and here, I think, is its rightful place, both by reason of its nature and its relations.

Hygiene, in its essence, one may define as "physical morals." Its aim is to teach the fulfilment of the duty to oneself and others of living a healthy life. This duty—these physical morals—are most capable of practical application in the school through the medium of Physical Education, especially as represented by Gymnastics and Ball-games. With these the child is taught, so far as the school is able to do so, to acquire good healthy bodily habits. The teacher who instructs in this *practical* Hygiene should also instruct in its theory, just as a teacher of arithmetic should also teach mathematics.

Moreover, for practical reasons, the teaching of Hygiene and Gymnastics should be associated, because the teacher who seeks to bring his pupils, the future teachers, to realise the importance of physical exercise in the school, and to awaken their interest in this subject, must undoubtedly employ Anatomy, Physiology, and Hygiene as the basis for his teaching, especially in the theory of Gymnastics.

My contention, however, that the Gymnastic teacher is the right person to teach Hygiene holds good only under the following conditions:—

Firstly, that the Gymnastic teacher is a man who, besides knowing his special subject, is fully trained as a teacher, and in all respects stands upon the same level of culture as his colleagues. And, secondly, that it is Swedish or Ling's Gymnastics in which he is trained, for this is the only system which is theoretically grounded upon Anatomy and Physiology.

Let me try to prove the correctness of this last statement.

The founder of Swedish Gymnastics—P. H. Ling (1776–1839)—was one of a number of men (*e.g.*, Gutsmutlis and Jahn in Germany, Elias in Switzerland, Amoros in France, Nachtgall in Denmark) who, about the close of the eighteenth and beginning of the nineteenth century,

recognised the need of the intellectual training being accompanied by an equivalent physical training.

Ling, however, realised what these others failed to see—that it is just as essential for him who would train the body to have a knowledge of its structure and activities, as it is for the doctor who would cure its diseases.

For the sake, therefore, of his Gymnastics, Ling studied Anatomy and Physiology; as much Physiology, at any rate, as was known in his time, and with his natural abilities and intuition he attained a quite remarkable insight into these subjects, considering the time in which he lived. He was thus in a position to create a rational system of physical exercises both for the healthy and the infirm—his Pedagogical and his Medical Gymnastics—a system which is known far and wide.

Other Gymnastic systems are merely collections of exercises without rational connection, chosen quite at random, with no attempt at an explanation of the choice or form of the exercises. Ling, on the contrary, in his thorough knowledge of the human body, had a sure guide for his choice of exercises and the form he gave them. Just as surgery, in its time, had to be brought from the domain of precept and guess-work into the realm of scientific enquiry and research, in order that it might reach its present development, so are the same measures necessary if Gymnastics is to be similarly advanced. Ling has taken the first difficult step in this direction, and has founded a solid basis upon which to build.

It goes without saying that he who would make himself familiar with Ling's Gymnastics must also become familiar with Anatomy and Physiology.

In the study of Ling's Gymnastics one has constantly to apply the essential doctrines of Anatomy and Physiology; indeed, one finds that they are so closely interwoven that the study of Gymnastics strengthens one's anatomical and physiological knowledge, and one gains thereby a far clearer understanding of the value of the exercises and of the way in which they operate.

Through the direct or indirect influence of Ling's Gymnastics instruction in Anatomy and Physiology has now become general in institutions for the training of Gymnastic teachers. The essential relationship, however, between these sciences and Gymnastics is still insufficiently insisted upon, and the pupils get but little assistance from their knowledge of Physiology for understanding the exercises.

I will give an example of the way Ling has turned Anatomy and Physiology to account in his Gymnastics. Among the great number of his exercises that could be used for this purpose I will content myself with a small movement, and one easily understood—namely, a backward bending of the head.

This movement is found in every system of Gymnastics, but with the exception of Ling's there is nothing more said about it than that the head must be bent well backward. Now, if this is carried out without any further direction, it will be done in the easiest possible way, that is by a movement exclusively in the upper part of the neck, so that the chin is pushed forward and upward. The results of this is merely to increase the curve in the neck-region of the spine, which, in the case of most people, is already abnormally large.

Ling's knowledge of the structure of the spine and the arrangement of its muscles showed him the incorrectness and ineffectiveness of such

movement. 'The forward curve of the neck-region is a continuation of a backwards curve in the dorsal region. Both these curvatures have a tendency to become abnormally developed, and to produce round shoulders and a hanging head ; with these comes a depression of the ribs, resulting in a flat and consequently a less capacious and less mobile chest. 'The head is as a heavy globe at the end of the flexible column which forms the spine. The position and carriage of the head, therefore, decides the shape of the spine in its upper region. And so Ling perceived how important it was to accustom the neck to support the head properly, and to correct any faults in the position in which it adjusted itself.

These also were the considerations which led him to decide upon the way in which the head should be bent backward.

The curvature forward in the neck-region should be straightened out. Ling effects this by requiring the chin to be drawn in. This can only be done by the contraction of the anterior muscles of the neck, and this, in turn, causes the curvature to be straightened out. The head being then carried backward in this position, the movement is transferred from the upper to the lower part of the neck, and is extended downward to the contiguous dorsal vertebræ, so that the curvature in this region also is powerfully straightened—an important means of preventing round shoulders and its accompanying deformities. With the bending backward in the dorsal spine, the ribs, on account of their attachment to the vertebræ, must necessarily take part in the movement, so that the chest is expanded and its mobility is increased.

Another factor contributing to this end is found in the circumstance that when the chin is drawn in the neck is lengthened by the disappearance of its curvature. The muscles running from the back of the head and bones of the neck to the breastbone and upper ribs are stretched, and when the head is forced back with the neck extended and stiff these muscles draw the front part of the chest with them, the ribs are lifted and the chest arched. The deeper the respiration the higher the ribs can be raised. The bending of the head backwards should therefore always be accompanied by a deep breath.

It requires practically no muscular effort to tip the head backward with a protruding chin. But to bend the head backward on Ling's method requires a powerful muscular contraction. The muscles in the front of the neck in order to straighten the cervical curve must stretch out the ligaments and the powerful muscles at the back of the neck. They must work still more powerfully when the head is drawn backward by the posterior cervical muscles so as to raise the chest and at the same time straighten the back, for the exercise is designed to stretch those muscles and ligaments which, through the habit of continual stooping, have become more or less permanently shortened.

Ling, by his thorough knowledge of anatomy and physiology, has thus fashioned out of this exercise, formerly of so little value, an important and effective exercise involving muscular effort just where the development of strong muscles plays such an important corrective rôle in the carriage of the head and back, counteracting powerfully the hanging head and rounded shoulders. It induces mobility of the chest, and is one of the best and most agreeable breathing exercises.

He who knows only the old form of this exercise, gives it but scant attention as being practically useless, and this view is shared by his

pupils. But he who has rightly understood Ling's explanation of it, and has felt its effect when done in accordance with his intentions, will teach it with quite another interest and use it frequently. Indeed, he will never omit to use it; he will secure for it the appreciation of his pupils, and he will at the same time have taught a little physiology and practiced a little hygiene. A rule has been given herewith for the correct carriage of the head, a rule which it is desirable all should know, inasmuch as a good carriage is not only beautiful, but necessary for health.

In a similar manner Ling's acquaintance with the human body manifests itself throughout his system. He has divided his exercises into groups according to their effect, and not, as in many other systems, according to the apparatus used in their performance.

The group of exercises which Ling has devised for the abdominal muscles and digestive organs, gives to the teacher the opportunity for entering upon the subject of digestion, its processes and hygiene.

The breathing exercises, found only in Ling's system, lead one naturally to speak of the respiratory organs and their work, their development and care, the importance of fresh air in the class-room and gymnasium, and so on. Numerous opportunities arise for referring to the action and hygiene of the heart and the circulation. On this matter Ling was so clear-sighted that he was able to introduce a gymnastic treatment for several diseases of the heart, the movements of which are used for this purpose at the present day.

I am of opinion, then, that Hygiene should be taught in training colleges in connection with Physical training, and such instruction should be given by a well-educated and able gymnastic teacher. The gymnastic teacher, as I have tried to show, cannot explain the value and effect of the different exercises without having previously imparted to his pupils some knowledge of the human body. In going through the exercises with them, he is led to explain the physiological and hygienic principles which are necessary for their clear comprehension. He has the advantage, moreover, of being able to exemplify his theoretical instruction by the practical work. The gymnastic teacher, therefore, is not tempted, as is, for instance, the teacher of natural history, to treat Physiology and Hygiene in an abstract and academic manner. No other teacher can emphasise so well as he the chief rule, for all personal hygiene, that the body must have a sufficiency of exercise in order to preserve its health. No other teacher so well as he can secure that the rule shall be carried into actual effect. He has the body for his subject in a much wider sense than any other teacher. Moreover, there is no other teacher, whose training involves such a thorough acquaintance with everything concerning the human body. The field of his work lies in the healthy and especially the growing body, just as the diseased body is the especial care of the doctor. What pathology is to the doctor, physiology is to the gymnastic teacher, and this in an ever-increasing degree.

It is not only upon theoretical grounds I am convinced of the justice of my proposition that the teacher of Gymnastics (that is, a well-trained teacher of Ling's system) is the proper person to instruct in Hygiene in the training college and in the school. This conclusion I have come to through my experience as a teacher in Denmark.

Before taking up physical education I had some knowledge of Physiology and Hygiene, but during my training at the Royal Gymnastic Central

Institute in Stockholm, I came to understand how closely connected are Physiology and Anatomy with the practical work of developing the body, and my interest in those subjects was thereby considerably increased.

Later, when I myself became a teacher, I found Physiology and Hygiene an immense help in arousing the interest of my pupils to a better understanding of what is meant by physical education.

I have found more than once that a pupil whom at first I could not get to take a strong interest in the work in the gymnasium and on the playing-field, has at length attained to that interest through my teaching in Physiology.

My experiences in the gymnasium, too, have aided me in getting my pupils to understand Physiology and in making it clearer for them.

Many teachers, especially in the secondary schools, have now and then used a gymnastic lesson to explain certain sections of Physiology that had special reference to the exercises, and have thus made the pupils see that the gymnastic work has an end in view, and is, therefore, worthy of an effort.

Formerly the instructors in gymnastics at the training colleges in Denmark never taught Physiology and Hygiene, but after we had introduced Ling's system and procured for it able teachers, it was found, time after time by the teachers of Natural History and Pedagogics, who had hitherto taken these subjects, that the pupils gained a more thorough understanding of Physiology and Hygiene when these were accompanied by the theory of Gymnastics; and this has resulted in the teaching of these subjects passing more and more into the hands of the gymnastic teachers. In some places it has been entirely handed over to them, and the development will undoubtedly tend more and more in this direction.

In Denmark we have a "gymnastic society" which has for its aim the advancement of rational physical education. One of its methods is the delivery of public lectures on Gymnastics, Physiology, and Hygiene generally, by teachers of gymnastics. This work has been so much appreciated that the Government has considered it worthy of financial assistance, and here, too, it has been proved that practical exercises may be successfully brought into mutual relations with Physiology and Hygiene.

Undoubtedly one of the reasons why Ling's Gymnastics has gained so much ground in our country during the last twenty-five years, is to be found in the circumstance that, besides the practical work in the gymnasium, the no less important work of explaining in a popular way the physiological and hygienic principles upon which the exercises are based, has been faithfully and energetically carried out.

If thus Physiology and Hygiene are combined with Gymnastics, so that it is the same teacher who gives instruction in these subjects, especially in the training colleges but also in schools, it is my conviction that they will be of far greater value, not only to the school, but also to life, according to the rule, *non scholæ sed vitæ discimus*.

Physiology and Hygiene will acquire a firm basis to build upon in the practical work of the gymnasium and playground, and physical training will more and more surely take root and thrive in the soil of these sciences. The work will take a higher position, it will rest on a surer foundation, and more surely be conducted along the right path. It will become

more widely appreciated, just as the physician's work to-day is more appreciated in proportion as his insight into the different branches of medical science has been deepened.

In conclusion, I wish to urge that the knowledge of Physiology and Hygiene offers the best guarantees against the great danger for physical education, that lies in athletic excesses and attempts to "break records;" for this, more than anything else, hinders the propagation of physical culture among the people, and prevents its becoming generally a means of education for our youth.

HYGIENE AND PHYSIOLOGY FOR TEACHERS.

By Dr. A. BROWN RITCHIE, *Manchester Education Committee.*

THE knowledge required by future teachers falls under two heads—(1) that required for the medical supervision of the pupils, and on which the medical officer will have to rely for a large amount of the work done; and (2) that required for the imparting of knowledge to the children.

The first can only be dealt with through a medical practitioner, while the second can be better dealt with by means of a trained teacher. The second branch leads up to and overlaps the first, and the ideal would be a course of instruction by a skilled teacher, somewhat on the lines of Miss Ravenhill's syllabus, followed by a series of lectures and demonstrations given by a medical practitioner—preferably by the doctor supervising the schools.

There are certain difficulties in the way.

- (a) Such knowledge is not requisite for the certificate examination, and has to be acquired when the young teacher is hard pressed in the mastering of compulsory subjects.
- (b) The knowledge requisite for the teaching of children necessitates a somewhat lengthy course of instruction and the expenditure of a considerable amount of time.
- (c) The knowledge which would be of infinite value to the doctor supervising the schools, and to the teacher in the exercise of his functions *in loco parentis*, if not preceded by (b), must be greatly extended or it will be incomplete and unsatisfactory, and will entail great difficulty in acquisition, while, if extended sufficiently, the time difficulty again crops up.

The subjects of hygiene and physiology directly applied to school life, and an adequate knowledge of the signs and symptoms of the common and easily recognised diseases met with in our elementary schools, including information regarding sight, hearing, different types of children, fatigue, etc., cannot be dealt with unless a course of between twenty and thirty lectures is given. While, for a course of instruction such as is required for the teaching of children, the seeing and handling of actual

organs or specimens may be requisite, the use of carefully chosen illustrations or drawings by means of lantern-slides is adequate for the doctor's lectures. It is also possible to procure coloured slides showing the common rashes and skin diseases, and it must be remembered that any course will have to be supplemented by actual demonstrations in school whenever possible.

There are many subjects such as mental deficiency and epilepsy, backward children, abnormal children, school-work from the medical point of view, badly nourished children, etc., which it would be better to deal with by means of special lectures to the teachers after the training period is past.

Assuming a knowledge of physiology, one can in four lectures give to existing experienced teachers a very fair account of what is required of them for the school doctor's work. Addresses to parents take the form of single lectures of a more popular nature; they are organised by the teachers, and anything tending to the benefit of the child from babyhood upward is dealt with. The causes of friction between parent and teacher, so far as these touch medical work, are also gone into.

There remains the hygiene of babyhood, nursing, etc., and this is dealt with by means of a highly qualified trained nurse, who lectures to the older girls in the schools, and in the presence of the teacher as a rule.

The advantages of having teachers who possess some knowledge of hygiene and physiology, and who have been instructed regarding children's diseases, etc., with a view to taking a part in the working of medical supervision of schools, are great and far-reaching.

Already in Manchester the effect of our endeavours to improve the teachers' knowledge from the medical point of view is seen.

The power of the teacher to observe and to act as an aid to the medical supervisor is underrated, even in those places where good work is done in this way; the inclusion of hygiene and physiology in the subjects of the certificate examination, the special recognition of extra knowledge of this nature, and the restitution and extension of the Government grant for children excluded from school on medical certificate (late Art. 101*) would do much to get rid of many difficulties.

SOME NOTES ON THE SUGGESTIVE TRAINING OF TEACHERS IN PRACTICAL HYGIENE.

By Miss MAUD CURWEN.

THE ideal set up by Professor Edgar, at St. Andrews, of a thorough course of educational hygiene, was described, also the work at Cardiff; the West Riding courses inaugurated by Miss Alice Ravenhill; the work as carried out by Miss Barker for the East Sussex County Council; and, finally, Miss Curwen's own work under the Staffordshire County Council. The whole body of evidence affords valuable testimony to the possibility of developing a keen interest in the subject among teachers, who have proved quick in grasping the practical and educational value of the subject when thus presented.

DE L'UTILITÉ DE L'ENSEIGNEMENT DE L'HYGIÈNE DANS LES ÉCOLES PRIMAIRES.

Par le DOCTEUR E. DE PRADEL,

*Médecin-inspecteur des écoles de la ville de Paris ; Vice-Président de la
Société des Médecins-inspecteurs des écoles de la ville de Paris et de
la Seine.*

LA question de l'enseignement de l'hygiène dans les écoles n'est pas nouvelle. Elle a été déjà étudiée et envisagée par beaucoup de bons esprits, désireux d'introduire dans l'éducation des enfants qui fréquentent les écoles communales, et en tenant compte du peu de temps passé par ces enfants au contact de leurs éducateurs, toutes les notions scientifiques indispensables pour permettre à ces futurs travailleurs de mieux aborder la lutte pour la vie plus tard.

Dans son rapport sur l'inspection médicale des écoles, lu à la Chambre des Députés française en décembre 1905, Monsieur le Député Vaillant avait nettement indiqué la nécessité de cet enseignement. Nous ne sommes pas surpris que ce député, qui avait déjà montré sa sollicitude pour les enfants des écoles dans son rapport au Conseil Municipal de Paris, en 1891, ait songé aux bienfaits que pourrait apporter à ces enfants l'enseignement de ce qu'on ne doit pas ignorer parmi les lois de l'hygiène à l'heure actuelle. Dernièrement encore, la Commission d'Hygiène du XI^e arrondissement de Paris, s'inquiétant des ravages produits dans la classe ouvrière par les maladies contagieuses, émettait le vœu que l'enseignement de l'hygiène fût institué dans les écoles, et faisait passer une note dans toutes les autres Commissions d'Hygiène des différents arrondissements de Paris pour que ce vœu fût renforcé par le vote unanime de toutes ces Commissions.

L'utilité d'un tel enseignement n'a pas besoin d'être démontrée. Nous savons tous que le meilleur moyen de combattre tous ces grands fléaux de l'humanité qui s'appellent : la tuberculose, l'alcoolisme, la syphilis, la misère physiologique, etc., est de mettre, dès l'enfance, l'individu en présence des grandes lois scientifiques les plus évidentes et les plus simples qui lui donneront les meilleures armes pour les combattre. Au moment où l'on s'inquiète, avec combien de raison, de rechercher dans l'organisme de nos enfants, non seulement les germes des grandes dyscrasies comme la tuberculose, mais encore les signes qui pourraient faire croire à une simple prédisposition à cette affection, il est indispensable que le sujet, lui-même, soit averti et armé, afin d'écarter de son chemin, dès le commencement de sa route, les ennemis qui le guettent à chaque étape.

Des enfants élevés dans la connaissance de la structure du tube digestif, et auxquels on aura montré les dangers et les méfaits de l'alcool, ne deviendront pas, tant qu'ils resteront sains d'esprit, des piliers de cabaret. Des enfants auxquels on aura montré la nécessité des jeux en plein air pour le développement de leurs muscles et l'oxygénation de leur sang, n'auront pas l'idée de tirer de leur poche, en plein mois de

juillet, dans une cour ensoleillée, un paquet de cartes, pour se livrer à ce jeu stupide, ainsi que je l'ai vu et déploré il y a quelques années dans une école que j'avais l'honneur d'inspecter.

A une époque où l'amélioration de la race et la lutte contre les maladies contagieuses et transmissibles font l'objet des préoccupations des pouvoirs publics et de tous les bons citoyens, à une période de notre histoire où cette lutte peut être entreprise avec quelques chances de succès, grâce aux progrès de l'hygiène, il est donc rationnel, nécessaire, *que les grandes lois de l'hygiène soient enseignées à l'homme dès que son développement intellectuel le rend apte à les comprendre.*

L'enseignement de l'hygiène doit donc faire partie de l'enseignement donné aux enfants des écoles primaires. Nous ajoutons que cet enseignement ne doit être fait *que dans la classe supérieure des écoles primaires*, d'abord pour ne pas surcharger les programmes, ensuite parce que les études faites par les enfants dans les classes moins élevées ne sont pas inutiles pour les préparer au nouvel enseignement scientifique qu'on leur imposera ; enfin parce que des enfants trop jeunes comprendraient difficilement l'utilité de cet enseignement.

Le principe de l'enseignement de l'hygiène dans les écoles étant admis, la première question qui doit retenir notre attention est celle-ci : *Qui doit être chargé de cet enseignement ?*

Sans hésitation nous répondrons que ce n'est pas l'instituteur qui doit être chargé de cet enseignement : Les questions soulevées par des notions d'hygiène, même restreintes, embrassent un ensemble de connaissances spéciales beaucoup trop vaste pour qu'un pareil bagage puisse être ajouté, sans préjudice, aux connaissances qu'on exige déjà du corps enseignant. Il faut pouvoir faire le plus pour bien faire le moins. Les éléments d'hygiène par trop rudimentaires enseignés aux professeurs, même dans les manuels les mieux faits, ne sauraient faire d'eux, en quelques leçons, des maîtres autorisés en cette matière, des maîtres capables de répondre, d'une façon précise et sans embarras, aux questions que leur poseront certains de leurs élèves dont l'esprit chercheur aura été mis en éveil par l'attrait du nouvel enseignement.

C'est donc à de véritables spécialistes, c'est-à-dire à des médecins, qu'il faut s'adresser pour enseigner l'hygiène aux enfants des écoles. Cela est aussi rationnel que de faire enseigner le chant par des musiciens, le dessin par des dessinateurs, etc. Dans cet enseignement spécial le médecin aura, d'ailleurs, une autorité que l'instituteur ne saurait acquérir d'emblée. Le rôle de celui-ci ne sera pas diminué pour cela, bien au contraire. Il pourra servir de répétiteur, de moniteur, et devra profiter de toutes les circonstances que son contact journalier avec l'écolier lui fournira pour montrer à ce dernier comment il doit appliquer, pratiquement, ce qu'il aura appris aux conférences faites par le médecin. De cette façon l'instituteur trouvera le moyen d'utiliser, pour le bien des élèves, les notions d'hygiène restreintes qui ont dû lui être enseignées à l'école normale.

Si, maintenant, nous nous demandons quelle est la catégorie de médecins qui doit être chargée de l'enseignement de l'hygiène dans les écoles, notre conclusion sera qu'il appartient au médecin-inspecteur de remplir ce rôle dans *son école*. Nul, mieux que lui, ne doit être au courant des questions d'hygiène générale ou particulière qui peuvent intéresser la santé présente et la vie des enfants qu'il connaît et dont il a la charge.

Nul, mieux que lui, ne saura adapter son enseignement aux besoins des jeunes cerveaux qu'il a étudiés.

Cet enseignement de l'hygiène dans les écoles, ainsi que nous le comprenons, aura le double avantage, tout en renforçant l'autorité du médecin-inspecteur et en élargissant son rôle, d'intéresser celui-ci doublement, aux écoles, et aux élèves dont il deviendra l'éducateur. Cela l'obligera, en même temps, à se tenir au courant de toutes les questions ressortissant d'une façon quelconque à tout ce qui touche à l'hygiène des écoles, à l'hygiène des écoliers, et à l'enseignement lui-même.

Le médecin-inspecteur des écoles, lorsqu'il aura été choisi par le concours, ainsi que le demande, avec insistance, la Société des Médecins-inspecteurs des écoles de la Ville de Paris et du Département de la Seine, lorsqu'il aura été à même de suivre des cours comme ceux qui, nous l'espérons, vont être organisés sous la direction de notre éminent confrère le Professeur agrégé Méry, à la Faculté de Paris, deviendra, ainsi, un véritable spécialiste en hygiène scolaire, et rendra à l'administration le maximum de services qu'on est en droit d'attendre de lui.

Sur quels sujets devraient porter les leçons ou conférences d'hygiène faites par le médecin-inspecteur aux élèves des écoles primaires, et quel nombre de leçons conviendrait-il de faire chaque année ? Nous avons pensé, pour des raisons qui n'ont pas besoin d'un long développement, que l'enseignement de l'hygiène à des écoliers de douze à quatorze ans devait, pour remplir son but utilitaire et pratique, être aussi simple que possible, dépouillé de toutes les inutilités et présenté sous un aspect clair et attrayant. Quinze ou seize leçons dans l'année nous semblent être le maximum de ce que l'on pourrait faire pour ne pas surcharger le travail de ces jeunes sujets. Nous ne pensons pas que ce soit ici le moment ni le lieu pour élaborer un programme des leçons d'hygiène qui pourraient être faites. La plus grande liberté devrait être laissée aux professeurs. Il serait, en tous cas, facile de se mettre d'accord sur les grandes lignes du programme et sur les notions générales qui devraient faire la base de l'enseignement. Ce que nous avons voulu montrer dans cette communication, c'est l'utilité, nous devrions dire la nécessité, de l'enseignement de l'hygiène dans les écoles primaires. Pussions-nous avoir réussi !

CONCLUSIONS.

1. L'enseignement de l'hygiène doit être institué dans les classes supérieures des écoles primaires.

2. Cet enseignement doit être confié au médecin-inspecteur de l'école, qui fera ses leçons ou conférences dans l'école même dont il est chargé.

DISCUSSION ON "TRAINING IN HYGIENE."

Dr. C. J. THOMAS, (Assistant Medical Officer, Education, London) : Three considerations force this question to the front : (a) the question of the teaching of hygiene in the elementary school ; (b) the wish of the medical officer that teachers should act as assistants in the work of school hygiene. These reasons are, however, quite subsidiary to (c) the broader outlook, which recognises that the teacher is in charge of a growing organism, and should be given a knowledge of the conditions of normal healthy growth of body and mind, so that the teachers can be in the ranks of those who will add by scientific observation of children to our knowledge of child nature and become the advance-guard of those engaged in child study. In the actual training there is the constant question of lack of time ; but if, in New

Zealand and elsewhere, one-half of the teacher's time during training can be devoted to physiology and cognate subjects, reorganisation of the present futile system of training pupil-teachers could easily be managed; so that during the last year appointments such as charge of special classes, baby classes, and so on, could be held; they could be taken around by the medical inspectors and get some practical teaching in the elements of anthropometry, vision testing, testing of hearing, cases of delayed development, physical abnormality, peculiar mental constitution, also matters of ventilation, lighting, desks and attitudes in school. Finally, the whole school organisation should have in view the healthy development of the child. What is the use of training teachers when the carrying out of hygienic methods and attention to health is an actual bar to their promotion and advancement in their profession.

Miss M. MICHAELIS (Maria Gray Training College, London) considered that the unsatisfactory teaching of school hygiene in training colleges was due in part to the fact that the young teacher does not believe herself responsible in any degree for the health of children in school. At present trainers do not believe in the necessity of a knowledge of hygiene for secondary school teachers. Lastly, the course and time given is too short. The remedies to be suggested are the teaching of elements of physiology and hygiene to children at school and a compulsory examination in school hygiene for teachers.

During the discussion, which was interrupted for the purpose, the following resolution of the American School Hygiene Association was proposed by Dr. LUTHER H. GULICK (delegate to the Congress from the Government of the U.S.A.), seconded by Dr. HELEN PUTNAM (delegate from the American Academy of Medicine), viz. :—

“Whereas the improvement in the health of and the hygienic conditions surrounding school children depends largely upon the intelligent co-operation, the competency, the interest, and the faithfulness of teachers and principals in matters of hygienic importance; therefore, be it resolved, that all schools having courses for the training of teachers should give instruction in (a) personal and school hygiene, and (b) the principles and practice of physical training, and that to each of these subjects should be given as much time as the major subjects in the course.

This resolution was carried with one dissentient.
The discussion was resumed.

E. A. PARKYN (Cambridge University Local Examination Syndicate) pointed out the absence of any requirement of knowledge of physiology or hygiene for the inspectors appointed by the Board of Education, and the absence of these subjects in the instruction of the training colleges. The requisites for teaching are—time, which must be got by jettisoning unimportant matters; means, which it is the duty of the education authority and the Board of Education to supply; teachers: although medical men inspect schools, teachers for the special purpose are wanted; subject: he controverted the views of previous speakers that too much physiology should not be taught; it is of the utmost importance to enable the teacher to understand the child as a living organism. The study of the brain and nervous system being of the utmost importance from this point of view.

THE TEACHING OF PHYSIOLOGY AND HYGIENE IN THE COUNCIL SCHOOLS.

By JANET CAMPBELL, M.D., M.S. (Lond.), *Assistant Medical Officer*
(Education) L.C.C.

MY attention has been repeatedly drawn to the extreme ignorance of the ordinary laws of health shown by nearly all children in the Council schools.

There is very little probability that any practical teaching will be obtained in the homes, therefore it seems most essential that it should form a regular part of the school curriculum.

This is doubly necessary in the secondary schools as a large proportion of the pupils intend to become teachers in the future.

For the medical inspection of schools the assistance given by the teacher is of the utmost value; on him, or her, rests, to a great extent, the selection of children to be examined by the doctor, and the results at present depend almost entirely upon the teachers and the personal influence exerted by them on the children and their parents.

Where a teacher lacks interest and considers the inspection merely as so much extra trouble, the results are usually very disappointing. On the other hand, one who appreciates the need for correcting physical defects in the child can, in the majority of cases, persuade the parents to have the doctor's advice carried out, and I cannot speak too highly of the devotion shown by some of the teachers to the well-being of the children. Thus the attitude of the teacher is a very important factor, and it is becoming increasingly necessary that he should have a thorough grounding in physiology and hygiene in their application to child life.

It seems to me very advisable that this part of the education should begin early, while the student is yet young and the habits still unformed.

The disadvantages of postponing it until the end of the course of study were forcibly brought home to me when correcting the examination papers at one of the L.C.C. training colleges. The papers were set on a short series of lectures on elementary physiology and hygiene which I had given to the senior students, and the answers showed how little they had grasped the broader principles involved and how much their attention was fixed on details often unimportant and frequently inaccurate. In a great measure this was due to the fact that they had had no previous instruction or training in hygiene, and coming nearly at the end of their college course, when many other subjects were claiming their attention, they had little extra time to devote to this branch of study, which is comparatively unimportant from the point of view of their final examination.

Hygiene should therefore form a part of the school curriculum after the age of eleven or twelve or even earlier, and should not be left until the student goes to college.

With regard to the scope of the teaching, the number of anatomical terms found in the ordinary text-book on school hygiene are unnecessary,

and I would limit the anatomy taught to the facts which are required to understand the functions and uses of the organs.

In connection with the physiology should be taken the simple rules of health and personal hygiene which are necessary for the efficient performance of the physiological functions, so that a continuous and harmonious impression may be given and the practical value of the lessons made very clear.

Attention might also with advantage be drawn to the nutritive value of the foodstuffs, which is so little understood by the poorer classes.

In order to make the subject more interesting to the elder students, some simple comparative physiology might be undertaken. Parallels drawn between the functions of parts of the human body, and those functions as met with in animal and plant life, together with the tracing of their gradual evolution and development, serve to put the teaching on a wider basis and to impress upon the students general principles rather than separate details.

For those intending to become teachers a certain amount of practical instruction is required to enable them to recognise such conditions as disease of the ears and eyes, mouth-breathing and adenoids; to make them understand the necessity for medical treatment in these cases, and the marked mental and physical improvement which so frequently attends the removal of adenoids or the provision of suitable spectacles.

They should learn to recognise the early symptoms of the common infectious diseases so that suspicious cases may be excluded from school and the spread of infection checked as far as possible. This is especially to be recommended in the infant schools where measles and whooping-cough so frequently break out, the mortality among these young children being comparatively very high.

They should also be taught the signs of fatigue and overstrain, to understand that a child's mental capacity is strictly limited, and that great harm may result from the attempt to force a tired brain to perform tasks to which it is unequal.

There might well be a daily inspection of all children in the elementary schools; dirty hands and faces should never be tolerated, and tooth-brush drill, as practised in some schools abroad, seems a most excellent institution.

That hot water is not obtainable in any of the schools is regrettable, as it is almost impossible for some of these children to get really clean with cold water; also a larger supply of towels should be provided.

Where school baths exist and a weekly hot bath is insisted upon, the general cleanliness of the school is said to improve very rapidly in every respect, and in many districts, where the homes are dirty and squalid, these baths are greatly to be desired.

Prizes or rewards might be offered to stimulate the interest in neatness and tidiness, and the children should be taught to take a proper pride in their personal appearance.

Practical teaching on these lines could not fail to have some beneficial effect on the health of this and succeeding generations.

THE TEACHING OF HYGIENE IN SECONDARY SCHOOLS.

By GEORGE FLETCHER,

*Assistant Secretary in respect of Technical Instruction, Department of
Agriculture and Technical Instruction, for Ireland.*

THE teaching of hygiene, though it finds a place in a few secondary schools, is by no means general in these islands. The curricula of secondary schools have been determined by a large number of circumstances, and perhaps it is well that changes should not hastily be made in curricula that may be said to represent the best thought of generations of thoughtful teachers. Against this view, however, is to be placed the consideration that curricula have not always been framed with sole regard to the needs of pupils, and that subjects find their way into the curricula, and their relative importance there is determined by a number of circumstances, such as the various public examinations, the want of unification in which so much distracts teachers and confuses educational effort. The choice of subjects, moreover, must of necessity be largely controlled by the character of the training received by teachers of secondary schools, and it is not until recent years that hygiene has been regarded as an applicant for admission to secondary schools whose claims could not safely be disregarded. Public opinion was not awakened, as it is coming to be to-day, to the importance of a sound and widely-diffused knowledge of the laws of health. It is only within recent years that the public mind has come to realise that many of the factors of health and disease are controllable, and that "the course of natural causation runs as smoothly in the human body as elsewhere." We have also to reckon with the fact that educational systems and methods do not readily adapt themselves to such advances.

The claim that we should make is that instruction in hygiene should be generally introduced as an integral part of the secondary school curriculum both for boys and for girls. What are the grounds for this claim? Briefly they are these: the full results of any scheme of education can be realised only if the conditions under which it is conferred are in harmony with the laws of health. These laws should be known and appreciated by all those directly responsible for education. We may pass over such considerations as the hygiene of the school building—warming, ventilation, and such-like—for these may be, and often are, dealt with by others, but the wide field covered by what is called "personal hygiene" demands, especially in residential schools, a wide knowledge of the principles of hygiene on the part of the principal, and, indeed, of the staff of a school. Every teacher of the young should understand something of the wonderful processes which control the working of the human organisms he is educating. We are outgrowing the belief that a liberal education can concern itself solely with mental processes. The executive powers are amenable to education, and a knowledge of the structure and functions of the sensory organs and of the nervous and muscular systems is necessary on the part of the teacher to-day. He must be prepared to recognise abnormal mental conditions, to perceive incipient defects of vision or hearing, to know how to adapt his educational

methods to the capacities and powers of his pupils, and to detect the premonitory symptoms of disease. These are heavy responsibilities, responsibilities hardly inferior to those of the parent. At many a juncture the health and well-being, nay, the life of the pupil rests with the teacher. But the knowledge, on the part of the teacher, of the principles of hygiene does not fully meet the case. It is now, I suppose, generally admitted that many of the conditions affecting life and health are modifiable. It is for the physician to determine to what extent and in what manner, but every educated boy or girl should be placed in a position to give "an intelligent assent and a ready obedience based upon that assent" to the teaching of the physician.

I recall Herbert Spencer's conclusion in discussing the question, "What knowledge is of most worth?" It was that first in order of importance was a knowledge of the structure and functions of the body. We do not seek to make every boy or girl a physiologist, but we recognise that the well-being of not only this generation, but of future generations, depends upon an intelligent appreciation of the conditions essential to healthy living, and that a knowledge of the ascertained scientific facts and principles underlying these conditions can be made an educational agent of the first importance. The salient facts concerning the circulation of the blood, respiration and digestion may be made fascinating and need not be "unpleasant." The profoundly important fact that putrefactive change and a whole class of diseases are caused by minute living organisms, and the more important facts concerning the life-history of these organisms, may not only be easily demonstrated to children, but may be so treated as to constitute as valuable a mental training as any subject in the curriculum.

So strong a case can be made for the general introduction of such teaching that little effective resistance will remain if certain difficulties can be overcome.

What are the difficulties, and how is this desirable end to be attained? The difficulties in the way are considerable, but in the end they nearly all resolve themselves into the problem of "the teacher." If the subject is to be permanently established in secondary schools it will be necessary that it should serve a truly educational end. Properly taught, the laws of health may, as I have said, be made as truly educational as any of the commonly taught subjects. In the realm of primary education, where the school life is short, it may be permissible to adopt a more didactic course; but in secondary schools the teaching of hygiene, to be sound and of permanent value, must be based upon a thorough knowledge of the fundamental principles of science. It must further, I venture to add, be based upon an intelligent knowledge of the cardinal principles of physiology, and these principles should in turn be taught in a practical manner. As I have already indicated, the problem is at bottom that of securing teachers adequately trained to give this instruction; and the important question at once arises whether it should in general be given by a member of the staff of a secondary school or by a visiting master. My own view is that, if we are to secure its permanent establishment in secondary schools, the teaching must be undertaken in the majority of cases by some member of the school staff.

My reasons for this view are as follows:—

Firstly, such a subject must be regarded not in any sense as an

"extra," which may be taken or left according to the whim of a scholar or the parent of a scholar, but must be taught as an ordinary subject of instruction. It should, moreover, be maintained in close relation with the rest of the school work.

In the next place, in order that the teaching should be really effective, the principles taught should not remain as a kind of remote knowledge, but should be assimilated into the everyday life of the school. The principal members of the staff of every secondary school should possess such a knowledge of physiology and the laws of health that they can readily perceive the symptoms of the more common diseases affecting youth and also safeguard the well-being of the sensory organs whose exquisite mechanism has so frequently been sacrificed owing to want of knowledge. Books on school hygiene we have in plenty, but it needs to be recognised that such books are of little value in the hands of one ignorant of the fundamental principles of physiology.

But how are we to secure that secondary school teachers shall receive such a training as will enable them to give this instruction? The difficulty is clearly much more complicated than in the case of primary schools, but an attempt should be made to secure that the subject must form an integral part of training courses for secondary schools where these exist. When this has been done, however, weary years of waiting will elapse before the subject could be introduced into schools as a subject of instruction. Such delay may be obviated by the adoption of a plan which we have tried and found to succeed excellently in Ireland. The Department of Agriculture and Technical Instruction for Ireland, created by Act of Parliament in 1899, had transferred to it certain functions which had hitherto been exercised in Ireland by the South Kensington branch of the Board of Education. These functions included the administration of a grant known as the "Science and Art Grant," part of which was available for the teaching of science in secondary schools.

It was considered by the Department, in which I am responsible for the work of technical instruction, that technical education, to fulfil its due function, must be based upon a knowledge of the principles of science, and that those principles should be taught in the primary and secondary schools of the country. The Department had power, as I have said, to assist such teaching in secondary schools. The teaching of science in the secondary schools of Ireland had fallen to a very low ebb. There was scarcely a science laboratory to be found in the whole country, and the teaching of science consisted of the theoretical study of what was called "natural philosophy." The Department formulated a programme, which was immediately accepted by the schools and adopted by the Intermediate Education Board. Teaching under this programme has now become general throughout the secondary schools in Ireland. There is scarcely a secondary school where it is not in operation. I shall only refer to this programme so far as it bears on the subject we are considering. It provides for a four years' course of instruction in science; the first two years are devoted to a preliminary course dealing with the fundamental principles of physics and chemistry. This two years' preliminary course must be taken by all scholars, whether boys or girls. It is followed by two years of instruction in special branches of science, of which "physiology and hygiene" is one. These special subjects are at present optional. It was laid down from the beginning that no grants

would be paid in respect of any school unless the school were provided with a properly equipped laboratory. The pupils must be at least twelve years of age, and must pass through the course in the prescribed order. The efficiency of the work was to be tested, not by examination but by inspection. An essential condition was that the teachers should in all cases be recognised as qualified by the Department, and no teacher was recognised who had not had adequate laboratory experience. The conditions were severe, but at the same time that they were laid down facilities were at once extended for meeting the requirements.

I shall only deal with one aspect of the scheme, namely, the training of teachers. In order to satisfy this need the Department at once established, and have continued to organise up to the present time, summer courses for the special training of teachers in the principal cities of Ireland and in convents in various parts of the country. These courses are attended by head teachers and assistant teachers from the secondary schools working in connection with the Department. The best teachers that can be obtained are secured from various parts of the kingdom in order to take charge of these teachers' courses. Travelling expenses and a maintenance grant are paid to the selected teacher-students, and a course, extending over nearly a month, is arranged every summer, and the work done is tested by written and practical examinations at the end of each course. To obtain permanent recognition teachers must attend at least five summer courses arranged in the same order as the programme—that is to say, the first year course, dealing in a practical manner with the fundamental principles of physics; the second year course, dealing in the same way with chemistry; while the third and fourth year courses deal in a more advanced manner with the various specialised subjects, of which physiology and hygiene is one. The fifth year course usually consists of a repetition course or a course in laboratory arts.

The defects of such a means of training teachers are all on the surface. The advantages, however, completely overwhelm the defects and difficulties. The disadvantage of so limited a period of instruction is more than counterbalanced by intensiveness and by the experience gained in teaching the subject in the school during the following session. The best test of such a system, however, is experience of its working, and, after six years' experience, it may be said to have completely justified itself and have secured the introduction of the teaching of experimental science in a manner that could not have been secured by any other method. It has secured the introduction into a number of girls' secondary schools of the teaching of physiology and hygiene on sound lines. The number of these schools is increasing, and we hope that the teaching will become general in girls' schools, in all of which it undoubtedly should, from an educational standpoint, form an integral part of the curriculum. The difficulties in the way of the introduction of the subject into boys' schools are obviously greater. The claims of professional subjects are stronger and more justifiable than in the case of girls' schools; in the case of such a subject as this we in Ireland have been in the habit of requiring a minimum of three hours per week to be devoted to the subject. I feel, however, that in the case of boys' schools the claims of professional subjects will make it difficult to secure this amount of time to the subject, and, indeed, it would be possible to restrict the syllabus in the case of

boys' schools, and, pending the growth of public opinion, we should be content with something less than three hours per week in these schools. It should, however, be insisted that the instruction, to be of lasting value, must be truly scientific, and must be part of a systematic course of instruction of the type described.

THE TEACHING OF HYGIENE IN SECONDARY SCHOOLS.

By C. E. SHELLY, M.A., M.D.

(*Abstract.*)

It cannot be said that hygiene has any existence as a recognised subject of instruction in the secondary schools of this country, with the exception of a certain number of training colleges for teachers. Even in these institutions the teaching is admitted to be irregular and intermittent, though nominally given on an average of one day per week. Consequently, although instruction in elementary hygiene is a subject which receives official recognition in the elementary schools, there is no direct provision or system for training those who are expected to impart this instruction. And to the pupils educated in our secondary schools of all grades (excepting the few training colleges alluded to above) the subject is not taught.

The chief reason for this omission is to be found in the admitted difficulty of adding another subject to the school curriculum. It is also urged that, there is no body of suitable teaching material in existence.

Further, while admitting the weighty reasons which do exist for giving instruction in the elementary laws of health to children such as attend the elementary schools, it is contended that special instruction in the subject is not needed by the pupils in secondary schools, inasmuch as these latter are drawn from a higher social plane, in which hygienic practice receives a meed of recognition sufficient for practical purposes.

But it if be admitted that a working knowledge of the elementary laws of health is most desirable for the individual, for his own sake and for that of the community, we cannot escape the admission that it is desirable for all individuals. Why, then, is it to be ensured for some only? Why provided for the children of the labourer and the small artisan, and denied to those who will in after life own the cottages and factories, administer estates, be responsible for the health condition of towns and cities, make and administer the sanitary enactments of the country?

The value of physical training for the youth of both sexes is generally allowed, but it stops far short of completion if unaccompanied by appropriate instruction in personal hygiene, of which it represents only a part, however useful that may be.

But before such teaching can become general, (1) its importance for their children must be more fully realised by parents of the educated classes; (2) its material value as an item of the scholar's educational equipment must be established.

THE TEACHING OF HYGIENE IN SECONDARY SCHOOLS.

By REV. H. B. GRAY, D.D., *Warden of Bradfield College.**(Abstract.)*

EVERYTHING which a boy does in company with his fellows should be done in accordance with the known laws which govern life. Simple explanation should be given of the reasons for gymnastic exercises; hand and eye training should be carried on at the miniature range or at the sub-target rifle. Advantage should be taken of the ample scope afforded for instruction on ways and means of improving bodily health. Boys must be trained to steer between the Scylla of idleness and the Charybdis of overpressure; exaggerated competition should be sternly repressed in the days of immature growth; sleep and diet should be more intelligently regulated than at present; the school staff should be trained to discriminate between individuals of varied temperaments. Self-indulgence needs repression in the interests of purity, and the fact that physical health is affected by the perversion of moral and mental processes must not be overlooked. The deep and difficult question of moral control must be faced warily and with tact.

THE TEACHING OF TEMPERANCE IN FINLAND.

By PROFESSOR TAAV. LAITINEN, M.D. (*Finnish Committee*).

IN all countries with organised temperance work, it has been clear from the very beginning that the children and the growing generation ought to be won for that idea through the power of education. Therefore the comparatively recent temperance movement in Finland turned special attention to education. Even at the first general temperance meeting in 1883, and at the general meeting of 1884, it was emphasised that, in order to implant the idea of temperance in the minds of children—(1) special temperance instruction was to be given in the schools, especially in the people's schools; and (2) special voluntary temperance schools and temperance societies for children (bands of hope) were to be established.

An active development of temperance work among children, began only as late as the middle of the nineties, especially supported by the "Opettajien terveys-jaraittuisyhdistys" (the Sanitary and Temperance Society of Teachers).

As the work of that society was interrupted for some time, the greatest temperance organisation of the country, "Raittiuden Ystävät" (the Friends of Temperance), in 1900 undertook that branch of the work through a committee, "Toivon liitto komitea" (the Committee of the Bands of Hope).

A printed list of temperance books is found in most schools and localities where meetings are held. For the youngest pupils a large number of small books containing short pieces on the subject are published, and the contents of them can be shown with magic-lantern illustrations.

Temperance schools have been started and are meant for children between nine and eleven years, the bands of hope for children of ten to fifteen years of age; and if the children will come to the bands of hope they must show a written permission from one or both of their parents or their guardian.

These schools are generally working in connection with temperance societies and under their direction. In the beginning English methods of work served as examples for the voluntary temperance teaching, but in the course of years a new system, in many respects original, has developed.

In 1905, 14,522 children belonged to the bands of hope, now greatly augmented. Of these 1025 took part in a prize competition in essay-writing competitions.

The Students Temperance Association has had a great influence upon the temperance work among the pupils of the secondary schools, and in most schools associations have been established with temperance instruction as their chief object.

In 1906 there were such associations in sixty-seven schools with 7292 members in all. At the present time about 8000 members, that is over 70 per cent. of all pupils. Every year they arrange competitions in essay-writing, giving diplomas to the winners.

For older students the Friends of Temperance have arranged so-called "temperance examinations," a "general examination" (three different courses), and a "teachers' examination" (two courses).

The highest examination is held by three different examiners, chosen by the executive committee, of whom one examines in the practical temperance work, one in temperance history, in other countries as well as our own, and one in the more scientific part of the "influences of alcoholic beverages."

Instruction courses in temperance are often given for large numbers in connection with the annual general temperance meeting, and the instruction then lasts about one week, and endeavours are made to get those teachers who are the most capable and most well versed in the subject.

During late years about 600 examinations a year have been passed.

The Government began to support temperance work in the schools as late as 1898, when the General School Board of Finland, in accordance with the sincere wishes of all friends of temperance, ordered the inspectors of the elementary schools to urge the elementary school teachers to give instruction on alcoholism in connection with the teaching of natural science, and to obtain suitable illustrations necessary for the purpose.

The General School Board wanted to call special attention to the continuation classes, in the programmes of which instruction on the nature and influences of alcoholic beverages ought to be inserted.

Later the Board required that in the handbooks of natural science which are used in the elementary schools there should be a short description of the influence of alcoholic drinks on the human body.

In 1904 the General School Board asked the headmasters of secondary schools, the directors of training colleges, and the principals of girls' schools, "to urge the teachers of natural history and hygiene to give instruction besides in the nature and influence of alcoholic beverages."

As a consequence of these stipulations temperance instruction is now gradually gaining more and more ground in the schools where it has been practised to some extent, even earlier on account of the fact that most teachers have been in sympathy with the temperance movement, especially in the elementary schools. As these stipulations of the General School Board, however, are not orders but only kind wishes, and it depends upon the teachers in question whether temperance instruction is given or not, those stipulations cannot, of course, fully serve their purpose.

Among the friends of temperance, therefore, a strong opinion is growing which demands compulsory temperance instruction in people's schools, in secondary schools, and in training colleges for teachers. This demand will very likely be fulfilled in the near future, as two propositions have been made in this direction in the Parliament now sitting, since so many people, not only friends of temperance, have for a considerable time been of this opinion.

From this short description we can clearly see that a strong movement is now working in this direction for compulsory temperance teaching, and it is very probable that we shall have, in the immediate future in Finland, compulsory temperance teaching in all schools.

A QUARTER CENTURY OF LEGAL REQUIREMENT IN TEACHING OF HYGIENE.

By HELEN C. PUTNAM, M.D., Providence, Rhode Island, U.S.A.

THREE essentials for public school instruction in hygiene are the mandatory law, the method, the teacher.

Between 1882-1901 forty-six laws, covering practically all our territory, and successively modified as inefficiencies of predecessors suggested, were enacted requiring physiology and hygiene, including temperance, taught to all public school pupils. With this has been evolution of text-books, the method specified by eighteen laws, of teachers, and of other than text-book methods.

This twenty-five years' experimentation, valuable in many respects, is just now under critical consideration, with other features of popular education, for the requirements of modern life have outgrown our curricula.

EVOLUTION OF TEXT-BOOKS.

Study of the evolution and status of text-books reveals suggestive facts. Approximately ninety (excluding revisions) have been published since 1882. The earlier books, chiefly by physicians and general teachers, and for secondary schools, are followed by a larger number whose authors,

with very few exceptions, are specialists in biologic sciences. They exhibit six noteworthy lines of progress.

1. Topics have been simplified until we have forty-three text-books for elementary grades, 14,000,000 pupils, who go no farther in the schools, a few books as excellent for their purpose as any high school books for theirs. Twenty-five years ago there were practically none.

2. The average proportion of hygiene is one-third of modern text-books, a little more in elementary grades and less in high school; a very few give more than half their pages to it. The average in twenty-five books "for high schools" published before 1883 is less than one-twelfth.

3. Illustrative experiments in all grades are very greatly multiplied; and for high schools since 1897 there have been published three books entirely of simple laboratory experiments, and one in which experiments constitute fully one-half the book, forming the basis of its teachings. Even in 1883 a few suspected that to try to teach children science without demonstration results in a "a mere mummary of words."

4. Easily observed facts about other objects in animal and vegetable life, and simple principles in physics and chemistry, are much more often utilised to make the main subjects clearer, the former specially in elementary grades.

5. Scientific progress is reflected, not only in many details of accuracy of statements, but also in added teachings concerning cells, cerebral localisation, and the nervous system; bacteria, communicable diseases, dust, antiseptics; inspection of schools, water supplies, foods and milk; common intoxicants and patent medicines. A few school-books before 1883 urged the dangers of alcoholic drinks, usually employing the confirmed inebriate as an example.

6. There are fewer pathologic details (or they are selected with greater discretion) and more attention to normal states. The ideal of a healthy, active physical life as a basis for success and happiness is kept more in the foreground and made more interesting. That "success depends on health" is fortified in several books by numerous lately discovered facts in school work, social and business life.

This significant fact—good modern school books on physiology and hygiene by specialists in biologic subjects—is accompanied by others equally suggestive. In twenty-five cities, our largest and most progressive, visited within twenty months, no school board had adopted these modern books in elementary grades (two were thinking of it), although in some high schools departmental instructors were using them; very few were listed among reference books for teachers.

TEACHERS AND TEXT-BOOKS.

Nineteen-twentieths of our 18,000,000 school children are in elementary grades, only one-twentieth in secondary. The 17,000,000 demand our special thought because they represent the poorer population whose environment and individual needs require most knowledge of hygiene; whose votes count most in supporting political measures for sanitary ends; and also for the important reason that, if the right attitude toward hygiene—physical morality—is not cultivated in early years, the problem becomes much more difficult later, too often impossible. In the following discussion, therefore, reference is to elementary grades, except when otherwise specified.

Where children in the cities visited used a text-book it was fifteen or more years old. The more frequent method is for teachers to prepare their own outlines, or for one to be issued from the superintendent's office, the reason given being, "It suits our special needs best." Those preparing these outlines were neither sanitarians, physiologists, biologists, nor special students in these lines, two physicians concerned being none of these, nor adepts in either pedagogy or text-book writing. The resulting class-work observed was brief and desultory, unsymmetric, often misleading, unessential details of anatomy being common, while hygiene, the practical application of science to living, was conspicuous by its inaccuracy or its absence. The instruction was verbal, rarely illustrated. In the upper grades particularly it was usually a bore to both pupils and teachers.

More than one instructor said with compunction, "I do this like a parrot. I really know nothing about it except what the books state." That is to say, our text-books are beyond the capacity of the average class teacher. Theoretically all instructors of youth should be able to teach sufficient hygiene. Our quarter century's experience fails to prove that they are; it proves, indeed, that the very great majority have not been.

BETTER METHODS THAN TEXT-BOOKS.

But the foregoing does not cover all teaching of hygiene found. Under the names "domestic science," "nature study" (botany, zoology), physical training, medical inspection, in certain cities is work so good that they insistently commend themselves as the really efficient methods. They have two characteristics in common—(1) they vitalise precepts by demonstration and practice; (2) they are under specially qualified leaders (teachers, supervisors, physicians).

The noteworthy result is that pupils are eager and intent, with marked progress in the use of language, in ability and in character.

MEDICAL INSPECTION AND PHYSICAL TRAINING.

Medical inspection instructs indirectly but forcefully by drawing attention of pupils, parents and the public to communicable diseases; to care of the person, general health, and development; to school furnishings, lighting, ventilation, and playgrounds; but instructs most efficiently when school nurses are employed. It means much in two of our largest cities, where from fifty to eighty thoroughly trained nurses not only attend to minor ailments at the schools, but daily radiate therefrom into homes, showing mothers details of cleaning, feeding, clothing children, and of caring for the premises. The immediate result observed is that pupils sent from school by the physician return sooner and in better condition, and that many otherwise unknown wrongs to childhood are reported to proper authorities for correction.

MOTHERS' OR PARENTS' CLUBS.

A valuable supplement to medical inspection, sometimes instituted by citizens co-operating with teachers, is mothers' clubs (or "parents," including fathers). Social devices invite attendance, and the opportunity is seized to discuss, under discreet leadership, various parental problems—clothing, food, amount of sleep, care of teeth; recreations, children's

reading, and instruction concerning sex and morality ; temperance and cigarettes ; communicable diseases. School physicians or others occasionally give talks to children, or illustrated evening lectures at the school-houses to the general public.

The sections of the Congress on medical inspection and physical training will discuss this phase of their work. It is only well to say here that a wide divergence in ideals and practice exists, from almost valueless inspection and gymnastics to alert officials who utilise their opportunities for implanting fundamental understanding and habits of health. The best in either, however, have not yet developed possibilities to the extent desirable. The true value of active games, athletics, dancing, in combating cigarettes, alcoholic drinks, and other evils, is still to be demonstrated, along with their value in training for citizenship.

BIOLOGIC STUDIES, HYGIENE AND UNIVERSITIES.

The most systematic and thorough teaching of physiology and hygiene is found in classes in domestic science and in biologic branches ("nature study," botany, zoology). That on many sides independently instruction has begun in the application of biologic science to daily living, strongly indicates its essential value.

The great hindrance is that institutions preparing superintendents and principals are too bound by academic traditions, so that these officials, lacking the all-round intelligence which includes natural sciences and their practical applications, fail to supply this want in children's education as rapidly and efficiently as the public demands.

Neither do our colleges and universities encourage instruction in hygiene ; only three out of fifty-six require entrance examinations in it. In England one finds, with much satisfaction, that Oxford and Cambridge local examinations include physiology and hygiene, domestic science, and nature studies. No other single agency can more effectively stimulate elementary schools to good work.

NATURE STUDY AND HYGIENE.

A sketch, necessarily very incomplete, of typical good work in nature study (biology, botany, zoology) suggests their possibilities.

These teachers have qualified in biology, including related physics, chemistry, etc., with the occasional exception of one without previous preparation, selected because of marked aptitude, and working under the supervision of a specialist. It is possible to develop one such from the staff of nearly every elementary school *provided the supervisor of science is competent*.

Two schools with children from ten to fourteen years of age studied household insect pests. Flies were found much more interesting and injurious than they had known. They collected eggs, watched them hatch into larvæ, saw the fly come out of the pupa case. They mounted between plates of glass egg, larva, puparium, male and female flies. They thus learn the life-story of the fly ; where it lays its eggs, what flies live on, how they carry filth and disease from sputum and other discharges to the next object visited, which may be one's face or food. The children, almost of their own initiative, started a crusade against uncovered manure heaps, foul garbage pails, and other common uncleanness ; they learn to believe in screens and covered food supplies.

The life-story of mosquitocs, from the "raft" of 180 eggs in a waste-water tub, was still more fascinating. That one insect, according to the pupil's own facts and computations, may be responsible for some millions of others within two months arouses special interest in the fate of a cupful of "wrigglers" poured into an aquarium of little fish. Committees, organised for their various neighbourhoods, hunted out stagnant water and applied the kerosene treatment with zest. The anopheles was found; and flies, mosquitoes, bed-bugs, fleas, rats, and other animals, as carriers of germ and parasitic diseases, was a live topic.

Similarly the life-stories and natural enemies of other vermin were traced—roaches, moths, buffalo bugs, meal-worms. The cost of extra labour and of damage to clothes and food was figured.

They studied life-stories of insects destructive of vegetable life. Nearly one billion dollars annually is lost by these pests in the United States, and even more by fungous diseases. Popular information in these lines alone would return the cost of instruction many times over. Cats as destroyers of birds (nature's agents in controlling insects) and as distributors of fleas were losing popularity as pets in one neighbourhood.

They studied the life-stories of plants of economic value, including some desirable to introduce for food, and made simple tests for their nutritional values. We use but about 2 per cent. of the thousand edible plants known.

One pressing problem is solved by these biologists partly in the work already outlined, but better in other laboratory work that time does not permit describing—how schools can wisely teach the transmission of life and sacredness of parenthood, which few parents undertake until too late, which many cannot teach rightly, which many never teach at all, neglecting this one of the two vital concerns of living, with so many tragic results to the individual and to society.

DOMESTIC SCIENCE AND CONTENDING INFLUENCES.

Not only the meaning and value of the gift of life, but the art of making a home—the biologic unit of society—until very recently has been omitted from popular education. Under the name "domestic science" indispensable knowledge of hygiene is given.

Two contending influences have appeared wherever introduced: on one hand short-sighted parents wishing immediate filial service after their own ignorant standards, and equally short-sighted schoolmen claiming that a smattering of indifferent cookery and manual work is the basis of better homes to be encouraged by schools; on the other hand, the far-seeing, who recognise this opportunity of introducing into common life appreciation of fundamental elementary science and its definite applications that will raise home-making and civilisation to a higher plane.

These two attitudes result in practical differences in classes, convincing intelligent observers that even good manual work is improbable without discriminating scientific preparation of teachers in physics, chemistry, and specially biology; not only for information but for the habits of accuracy in observation, in reasoning, in execution, as well as for the superior resourcefulness and personality going with these attainments.

SPECIAL TEACHERS.

Under such one sees cleanliness of utensils, food, room and person consistently and understandingly maintained. One must observe several such instructors to appreciate where teaching household sanitation and hygiene should begin when homes do not supplement.

After two years' intelligent, painstaking observance of scientific laws one finds a pretty neatness, accuracy, and mental awakening replacing the former slovenliness and vacant expression. A few of the best schools include boys in these classes, for whom the science and economics of hygiene and sanitation are as essential as for girls.

Typical good courses personally examined in over thirty cities demonstrate that hygiene and sanitation can be as definitely taught as accurately practised, as intelligently understood by boys and girls from ten to fourteen years of age as can arithmetic—certainly they are of not less value in the future; that it is invariably accomplished by special teachers capable of simplifying fundamental biology, chemistry and physics for easy comprehension; and that they work under expert supervision.

CRAMMED TEACHERS.

The classes of superficially crammed teachers and supervisors likewise demonstrate that to maintain domestic science under such guidance is a waste of public funds and discrediting of a most valuable opportunity.

Misstatements of facts, dirty finger-nails and use of hands, carelessness of dish towels, of flies and dust, of garbage pails and cupboards, of proper serving and eating, confusion and bustle are common failings. The contrast between the kitchens and classes of consistently scientific teachers and those where "manual training" ideas predominate suggests that between the sick-room under an anxious mother and under a trained nurse, one has time for all essentials in orderly sequence, the other urges want of time as excuse for evident shortcomings, while of many she is unconscious.

It seems wilful shutting of eyes to obvious facts in the evolution of domestic work and of women's tendencies, since elementary education has been required of her, to maintain that routine housework, monotonous because of familiarity, isolation and lack often of the stimuli of appreciation, recompense, recreations and standards, should be more attractive than shop and factory and office. There is no endeavour calling for higher ability than the making of a home. Since even the humblest needs intelligence, schools fulfil their mission only when they train future home-makers, both boys and girls, in an understanding of the simple laws of science that raises daily living and "drudgery" into a conscious part of the great scheme of the universe.

CORRELATIONS.

This excellent teaching of hygiene through medical inspection, school-nurses, parents' clubs, physical training, nature studies, domestic science, is still heavily discounted by its inco-ordination, numerous hiatuses, overlappings, even inconsistencies resulting. Neither is it well correlated with other branches of instruction, which have the same fault too often among themselves. Correlation of subjects is the secret of having abundant time for all essentials of education. Many teachers find that arithmetic is first

learned in laying out a school-garden and in running it, or in the laboratory or school-kitchen. Among many children's written work I have found by far the best English, the most logical thought and grasp of subject, in fifteen papers by children, from thirteen to fifteen, on "Reproduction in Plants and Animals," all based on original observation. Teachers find that the significance of art first appears to children when planning in detail and furnishing a home for a family that is to live healthfully and happily. Such correlation implies an expert supervisor of science instruction with comprehensive understanding of social problems and needs.

MORAL INSTRUCTION.

Another co-ordination is with moral instruction. Several biologists specially mention the alteration in behaviour of many children from eight to fourteen years of age after one, two or three years' care of delicate, growing plants and animals, while making their systematic observations on the essential functions, respiration, circulation, nutrition, elimination, reproduction.

Briefly summed, there grew a greater thoughtfulness and gentleness; the faces of unclean-minded children cleared into frank-eyed interest, and physical habits improved. Accuracy of seeing and speaking, which is truthfulness, distinctly grew, with a sense of protection and justice for the weaker, and a judgment as to what was worth while and what was not.

Certainly it would seem as if no words could have the force of this actual study in impressionable years of the Maker's laws of life and its preservation. This method proves the value of temperance more efficiently than statements that children find so difficult to reconcile with observations in their own environments. It is constructive teaching of the elements of normal living as a basis for the negative, "Thou shalt not."

Thoughtful people must recognise in schools the mental starvation of children from eleven to fifteen, whose infancy is prolonged with non-essential superficialities when their whole being is demanding knowledge of vital truths; and likewise must recognise in society the evils resulting even in youth from ignorance and misinformation often worse than ignorance.

Our social ailments, whether due to love of money, of conquest, of various vices, resulting in ill-health, degeneracies, poverty, criminality, can be remedied only by adding a higher ideal to that now cultivated, which is acquisitive and egoistic (the perfection of the individual), can be remedied only when the plastic childish character, before ineffaceably stamped with such ever-present influences, is moulded by competent teachers through knowledge of the wonderful phenomena of common life and their eternal laws, which are the basis of hygiene (physical morality) and of all morality.

One must "learn what is true in order to do what is right."

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L'ENSEIGNEMENT DE L'HYGIÈNE ALIMENTAIRE AUX MAÎTRES ET AUX ÉCOLIERS.

Par le DR. LOUIS VIEL, de Paris.

La lutte contre l'alcoolisme, activement poursuivie, a suscité depuis quelques années un enseignement spécial, prescrit officiellement en France par la circulaire du 9 mars 1897. C'est l'enseignement anti-alcoolique, parfaitement organisé, et dont les premiers résultats sont dès maintenant appréciables.

Des ouvrages spéciaux, des tableaux, des affiches, des conférences et des projections, ont vulgarisé les notions scientifiques dont la connaissance est à la base de la campagne antialcoolique. Les lésions organiques, les dégénérescences physiques et intellectuelles causées par l'alcool, ont été mises sous les yeux des maîtres et des écoliers, dans des leçons spécialement consacrées à ce sujet. Des inscriptions, frappantes dans leur concision, se sont imposées à l'attention de l'enfant, et ont laissé leur empreinte dans son esprit malléable. C'est ainsi que, dans la lutte sociale contre le fléau, l'école a été appelée à jouer un rôle important, en préparant des générations mieux instruites des dangers de l'alcool.

Or l'alcoolisme n'est qu'un des nombreux excès, une des nombreuses fautes commises chaque jour contre l'hygiène alimentaire; ceux qui le savent ont le devoir d'éclairer à ce sujet ceux qui ne le savent pas, et qui pèchent, par ignorance, par insouciance, ou par scepticisme.

Ce qui a été fait pour l'alcoolisme peut et doit se faire pour l'hygiène alimentaire toute entière. Les moyens d'enseignement vulgarisateur qui ont été mis en œuvre contre le plus important peut-être, mais contre un seul des nombreux abus alimentaires que nous ayons à réformer, peuvent être employés avec un égal succès contre tous les autres. C'est en faisant l'éducation alimentaire de l'enfant, c'est par l'école, en un mot, que l'on fera peu à peu pénétrer dans les masses les principes généraux de l'alimentation rationnelle, avec cette conviction que si à notre époque on meurt rarement de faim, on meurt souvent, par contre, de manger trop, et de manger mal.

Si, en enrayant les progrès de l'alcoolisme, on peut se flatter de l'espoir qu'un jour viendra où les asiles d'aliénés, les hôpitaux et les prisons seront trop vastes pour leurs hôtes habituels, on peut, non moins à bon droit, être convaincu que des enfants mis en garde contre tous les excès alimentaires, mieux instruits de ce qu'ils doivent manger et de la façon

dont ils doivent manger, prépareront des générations plus saines et plus vigoureuses.

" Il m'a paru," dit le Prof. Armand Gautier, " que les différents états diathésiques qu'on est convenu d'attribuer vaguement à des tempéraments délicats, à des constitutions vicieuses, à des idiosyncrasies, tiennent le plus souvent à des modes défectueux de se nourrir, individuels et héréditaires. L'arthritisme, la goutte, les états migraineux ou névralgiques, la neurasthénie, les dyspepsies, les gastralgies, les entérites, le rachitisme, l'artério-sclérose, beaucoup de maladies de la peau, les dégénérescences physiques et intellectuelles qu'amène l'alcoolisme, et, d'une façon indirecte, un grand nombre d'affections du cœur, du foie et des reins, enfin quelques unes des formes du diabète lui-même, se rattachent immédiatement ou médiatement à des habitudes d'alimentation exagérée ou irrationnelle, et peuvent se modifier ou disparaître avec elles." ¹

Or ces habitudes d'alimentation exagérée ou irrationnelle existent dans presque toutes les familles, et se transmettent par éducation des parents aux enfants. Si l'on est un peu moins porté qu'autrefois à considérer avec une sorte d'admiration envieuse les " gros mangeurs," les " bonnes fourchettes," si l'on croit moins à leur santé inébranlable, à leur longévité, c'est que l'expérience s'obstine inlassablement à montrer au contraire leur fragilité et leur précoce déchéance physique. Et cependant, on n'est pas encore arrivé, dans le grand public, à se convaincre de la relation presque constante de cause à effet, qui existe entre les morts subites, " en pleine force," les maladies " d'autant plus graves qu'elles frappent un sujet plus vigoureux," et la déplorable hygiène alimentaire contre laquelle on commence à s'élever.

Beaucoup de parents poussent leurs enfants à beaucoup manger et les habituent à un véritable gavage. Ce préjugé, qu'il faut détruire, au sujet de l'alimentation excessive, est entouré de beaucoup d'autres, qui concernent le choix des aliments. La viande est encore, presque partout, considérée comme un élément indispensable de force et de santé, alors qu'en réalité elle joue surtout le rôle d'excitant physiologique.

La campagne antialcoolique a déjà fait justice de préjugés séculaires, et de dictons contraires à la vérité scientifique. Elle a démontré l'ironie macabre du nom même de l'eau de vie, et la fantaisie dangereuse qui a fait du vin " le lait des vieillards." Il est temps, qu'élargissant le champ de bataille, on livre combat à toutes les erreurs, à tous les préjugés en cours touchant la nutrition en général. Sauf des cas bien délimités et moins fréquents qu'on ne le pense, la suralimentation guérissante de tuberculose, les viandes saignantes dispensatrices de force et de santé, les jus et les extraits de viande miraculeux, ont fait leur temps. Il appartient aux médecins de les réduire à leur juste valeur, comme ils l'ont déjà fait pour les vins fortifiants et les élixirs reconstituants.

Sans aller jusqu'au végétarisme absolu, il semble assez prouvé par les travaux récents, que si la viande est un aliment utile lorsqu'elle entre dans un régime en quantité relativement minime, elle devient au plus haut point nuisible, lorsqu'elle constitue la base principale de tous les repas.

" Il en résulte," disent Marcel et Henri Labbé, " une intoxication lente par les produits nuisibles dérivés de la chair animale." ² Cette

¹ Prof. Armand Gautier, " L'Alimentation et les régimes " (Introduction), Paris, Masson.

² *Presse Médicale*, 26 fév. 1907.

intoxication me semble prouvée par ce fait seul, que, si l'on vient à priver un sujet presque exclusivement carnivore de sa ration habituelle de viande, il éprouvera, même s'il reçoit en aliments d'origine non carnée plus de l'équivalent de la ration supprimée, il éprouvera, dis-je, une sensation de fatigue, de faiblesse, un malaise, qu'il attribuera à l'insuffisance de nourriture, alors qu'il ne s'agit là en réalité que d'un phénomène analogue, toutes proportions gardées, à celui qui se produit chez le toxicomane qu'on sèvre. Et, toute intoxication d'habitude étant caractérisée par cette sensation de besoin, qui apparaît lorsque le toxique vient à manquer, on ne peut s'empêcher de rapprocher le carnivore du fumeur, du buveur de café, de l'alcoolique, du morphinomane.

Pour celui qui veut obtenir le maximum d'assimilation, c'est-à-dire d'effet utile, avec le minimum de fatigue, c'est-à-dire d'usure pour les organes digestifs, le choix des aliments, la composition des menus, l'ordonnance des repas, sont soumis à certaines règles dont quelques ouvrages récents ont commencé de vulgariser les principales.

Il est certain que la ration alimentaire ne sera pas la même pour l'adulte, pour le vieillard, ou pour l'enfant ; que celle du travailleur manuel sera différente de celle de l'employé de bureau, et que certaines affections organiques contre-indiqueront chez quelques sujets certains aliments, certains modes de préparation, certains condiments, utiles, ou tout au moins indifférents aux bien portants.

Sans entrer dans les détails, il serait facile d'indiquer la plus ou moins grande digestibilité des aliments usuels, les avantages de certains modes de préparation, l'utilité d'une cuisson plus parfaite, stérilisatrice, pour certains d'entre eux, les inconvénients d'une association maladroite de tels ou tels mets, les bénéfices au contraire de la variété raisonnée dans les menus, et de l'observation de certains principes dans leur composition.

On apprendrait enfin aux jeunes générations à manger lentement, à mastiquer le bol alimentaire patiemment, à l'insaliver avec soin, premières conditions d'une digestion facile et complète. On leur montrerait les inconvénients des boissons prises tout au commencement du repas, ou absorbées en trop grande quantité. On leur enseignerait l'heureuse influence exercée sur la digestion par une boisson chaude prise à propos. On les mettrait en garde contre les excitants en général, bons tout au plus à faire dépenser une force qu'ils sont incapables de produire par eux-mêmes.

Dans les internats, la surveillance des repas, confiée à des maîtres édifiés eux-mêmes sur la valeur des conseils pratiques qu'ils auraient à donner, consisterait à s'assurer que les enfants mangent bien, qu'ils mangent lentement, qu'ils ne négligent pas tel aliment utile pour tel autre qu'ils préfèrent, et qui l'est moins ; en un mot, qu'ils ne commettent pas de fautes contre l'hygiène alimentaire.

Alors peut-être verrions nous diminuer le nombre de ces jeunes gens au visage rouge, luisant, acnéique, que le Dr. Jacquet guérit en leur imposant de manger avec soin et lenteur.

Peut-être enfin verrions nous moins de constipés, comme dans certaine grande école que je connais, où, sur la foi des réclames, une bonne moitié des élèves, et le directeur en tête, essaient une ou deux fois par semaine de rétablir à force de pilules laxatives, une fonction dont la régularité doit être le premier bénéfice d'une hygiène alimentaire bien comprise.

J'ai eu précisément l'occasion d'attirer l'attention de quelques

directeurs d'écoles, comportant un internat, sur les principaux points que je viens d'indiquer. Tous ont pu remarquer et m'ont signalé la tendance à abrégé le repas, l'insuffisance de la mastication, la répugnance pour certains aliments (légumes en général, fromages), et la tendance à abuser de certains autres (charcuterie, viandes rôties, grillées, pommes de terre). Tous se sont accordés à reconnaître combien il y avait à faire pour amener une réforme dans les habitudes alimentaires vieilles de la plupart des enfants. Tous enfin, édifiés par les heureux résultats de l'enseignement officiel de l'antialcoolisme, se sont montrés persuadés que le meilleur moyen d'accomplir la réforme alimentaire réclamée par le corps médical, était de la commencer dès l'école.

D'ailleurs le programme que je viens d'indiquer d'une façon aussi générale a déjà été l'objet d'un commencement d'exécution. Au premier Congrès International d'Hygiène Alimentaire, Mme. Bonabry nous a renseigné sur la place occupée par les questions d'alimentation dans l'enseignement ménager à l'École secondaire de jeunes filles de Fribourg. Un cours de cuisine y est organisé d'une façon officielle. "On y apprend aux élèves à connaître les aliments, leurs qualités, leurs propriétés, leur composition, leur valeur nutritive, leur digestibilité. On leur enseigne à connaître les aliments qui, pour un prix donné, fournissent la plus grande quantité d'éléments nutritifs ; à les préparer de manière appétissante, sans leur faire rien perdre par leur préparation de leur valeur nutritive, ni de leur digestibilité ; à combiner les repas de manière à satisfaire à toutes les exigences physiologiques."

En France, dans les écoles de jeunes filles, le cours de cuisine est également l'occasion de quelques considérations théoriques sur les aliments et leur préparation.

A Paris, l'auteur d'un ouvrage préfacé par le Dr. Mathieu, et dans lequel la cuisine sort enfin des erreurs et des préjugés routiniers pour se conformer aux règles de la diététique moderne, Mme. Moll-Weiss, a pris l'initiative d'une "École des Mères," où les jeunes filles trouvent un enseignement ménager qui comporte une partie, "Hygiène alimentaire," véritablement scientifique et fort complète.

A La Rochelle, la directrice de l'école primaire supérieure de filles, Mme. Babinot, a constitué une association, dite du "Foyer domestique," et obtenu le concours de dames de la ville, qui viennent enseigner pratiquement aux élèves le choix des aliments et leur préparation. Les sommaires des leçons théoriques, les cahiers des élèves, les procès-verbaux des assemblées générales de l'œuvre ont été d'ailleurs envoyés à l'Exposition d'Hygiène Solaire de Londres.

A l'école primaire supérieure de Rouillac (Charente), le directeur, M. Villepontoux, et le médecin de l'école, le Dr. Saizy, ont remarqué la préférence manifeste des enfants pour la viande, l'abandon presque absolu des légumes verts cuits, l'usage très restreint des pâtes alimentaires, qui sont presque inconnues. L'enseignement de l'hygiène est assuré dans cet établissement par le Dr. Saizy, et mon confrère y a fait une large place à l'hygiène alimentaire pratique. "Les paysans charentais," m'écrit-il, "boivent, quelquefois en excès, le vin qu'ils récoltent et l'eau de vie qu'ils fabriquent, mais les ivrognes sont rares et l'on fréquente peu les cafés. Aussi ne constate-t-on pas chez eux d'alcoolisme bruyant, de troubles cérébraux ; mais, comme ils sont en même temps gros mangeurs de

viande, ils deviennent artério-scléreux, et les hémorragies cérébrales sont fréquentes."

C'est ainsi que, sous l'influence des médecins, la nécessité de l'hygiène alimentaire commence à entrer dans les convietions ; mais à part quelques tentatives de ce genre, dues à une initiative privée, à part le cours de cuisine dont bénéficient seulement les élèves filles de certaines écoles, et, d'une façon plus générale, à part une ou deux leçons du cours d'hygiène plus spécialement consacrées à l'hygiène alimentaire, il faut bien reconnaître que l'enseignement de l'alimentation rationnelle n'occupe pas dans l'éducation de la jeunesse la place que semble devoir lui conférer son importance.

"Si, dans les programmes des écoles élémentaires," a pu écrire le Dr. Élie Pécaut, "l'hygiène n'est point passée totalement sous silence, elle y occupe une place insignifiante."

Dans les écoles primaires supérieures, où douze leçons, et dans les écoles normales, où vingt leçons d'une heure sont consacrées à l'hygiène, les considérations sur les falsifications et les intoxications alimentaires, sur les viandes putréfiées, les champignons vénéneux, les parasites contenus dans la viande, et les eaux contaminées, constituent encore presque tout ce qu'il est officiel d'enseigner sur le point qui nous occupe.

Il faut en arriver au programme du 14 juin 1907, concernant l'enseignement secondaire des filles, pour trouver indiquées les notions importantes dont nous demandons la vulgarisation : "Ce qu'on doit et ce qu'on peut manger. Danger d'une alimentation trop azotée. Nécessité d'un régime mixte. Nécessité d'une mastication suffisante. Régularité des repas, etc."

Enfin il faut bien dire aussi, que dans l'enseignement ménager, dans les cours de cuisine qui existent déjà, et qui constituent actuellement presque tout l'enseignement pratique de l'hygiène alimentaire, on continue, suivant l'expression du Prof. Armand Gautier, "à vivre de traditions et de sentiments." On enseigne la cuisine usuelle empirique, et l'on ne sait pas mettre d'accord la pratique avec la théorie, ou du moins on néglige de le faire.

Il me semble donc nécessaire que soit pris en considération sérieuse, un projet d'organisation d'un enseignement complet, scientifique et pratique, de l'hygiène alimentaire, variant suivant le degré de l'instruction, mais basé sur deux principes qu'on ne doit cesser de répéter aux élèves, depuis l'école communale jusque dans les grandes écoles : "Nous nous alimentons presque toujours trop, nous nous alimentons presque toujours mal."

Il faut que, persuadés de l'absolue nécessité de l'alimentation rationnelle et de la haute portée sociale de leur tâche, les éducateurs de la jeunesse s'emploient à tous les degrés à combattre, non plus seulement l'alcoolisme, mais tous les excès, tous les abus alimentaires, quels qu'ils soient.

Il serait à souhaiter également que fût décidée l'interdiction absolue de la vente abusive faite aux élèves par des employés de certains établissements scolaires : vente de gâteaux, sucreries, bonbons, etc., dont se bourrent les enfants, au grand détriment de leur tube digestif.

Dans les internats, une fiche sanitaire individuelle a été prescrite par la circulaire du 20 octobre 1902, sur les mesures à prendre pour éviter la contagion de la tuberculose. La taille, le périmètre thoracique, le poids

de chaque élève, doivent y être notés trimestriellement, et je suis certain que lorsque l'attention aura été attirée sur ce point, on aura plus d'une fois l'occasion de vérifier ce que j'ai observé avec mon collègue le Dr. Dereeq : une courbe de poids stationnaire ou même décroissante avec une suralimentation carnée, qui devient tout d'un coup rapidement et régulièrement croissante, sous l'influence d'un régime moins abondant et presque exclusivement végétarien.

La balance, qui, grâce à mon regretté maître Budin et à ses élèves, est devenue le critérium le plus sûr de la santé du nourrisson, et par conséquent de son alimentation rationnelle, doit trouver son utilité à tous les âges, et je ne doute pas qu'elle ne devienne, entre les mains des éducateurs futurs, la source d'indications précieuses dont ils n'auront qu'à se louer, et pour la santé de leurs élèves, et pour la prospérité de leurs établissements.

Quand aux éléments de cet enseignement nouveau, on les trouvera dans les ouvrages et les travaux récents d'Armand Gautier, de Roger, de Mathieu, de Martinet, de Pascault, de Monteuis, de Cayla, de Gottschalk, dans les tableaux de Landouzy et Labbé, dans le travail si complet présenté par M. Alquier au premier Congrès d'Hygiène alimentaire. Les indications et les notions éparses dans tous ces auteurs, ou trop aridement scientifiques, pourraient être résumées, condensées, et mises à la portée des jeunes intelligences, dans un ouvrage classique du genre de ceux dont une multitude se dispute l'enseignement de l'anti-alcoolisme dans nos écoles.

Enseignés théoriquement dans la classe, les principes de l'alimentation rationnelle seraient pratiquement inculqués aux élèves pendant le repas même, par les maîtres chargés de la surveillance.

C'est ainsi que le jour où, par tous les moyens de vulgarisation scientifique dont nous disposons, et surtout par l'école, la conviction qu'il est nécessaire de réformer notre hygiène alimentaire aura pénétré dans le peuple, nous aurons satisfait à "l'une des conditions essentielles dont dépend étroitement la santé de l'individu, la prospérité de la famille, l'amélioration des constitutions et des races" (Prof. Armand Gautier).

CONCLUSIONS.

1. Les acquisitions de la science moderne ont suffisamment établi la nécessité d'une hygiène alimentaire bien comprise, et ont permis de poser d'une façon assez précise les règles de l'alimentation rationnelle, pour qu'on puisse songer, comme le réclame le Prof. Landouzy, à en organiser et à en vulgariser l'enseignement.

2. Dans les internats, cet enseignement doit être complété par une surveillance du réfectoire, tendant à assurer non plus seulement la police, mais aussi l'observation des habitudes alimentaires des élèves, et leur modification s'il y a lieu.

3. Les différents titres universitaires dont l'obtention confère le droit de participer à l'éducation et à l'enseignement de la jeunesse, doivent comporter une interrogation sur l'hygiène alimentaire, et sur la façon dont les candidats en comprennent la pratique et l'enseignement.

AUFKLAERUNGSARBEIT UEBER DIE BEWAHRUNG DER JUGEND VOR DEN GENUSSGIFTEN.

Von F. WEIGL,

Lehrer, Herausgeber der "Pädagogischen Zeitfragen," München.

(Auszug.)

Ich habe im Herbst 1906 ein Preisausschreiben für meine "Pädagog. Zeitfr." erlassen über die Beantwortung der Frage: "Wie lässt sich die Aufklärung der breitesten Volksschichten über die Schädigung der Jugend durch Genussgifte am wirksamsten erreichen?"

Führende Kräfte der einschlägigen Gebiete, Geh. Medizinalrat Universitätsprofessor Dr. A. Eulenburg, Berlin, Hofrat Univ.-Professor Dr. Otto Willmann, Prag, Seminardirektor Dr. A. Pabst, Leipzig, Frau Kommerzienrat Hedwig Heyl, Berlin, hatten mit mir das Preisrichteramt übernommen. Es wurden daher beste Kräfte zur Bearbeitung angelockt und 67 gründlich wissenschaftlich bearbeitete und auf reicher Lebenserfahrung ausgebaute Arbeiten eingesandt. Einstimmig oder fast einstimmig betonten dieselben vier grosse Gesichtspunkte, die ich mir auch für die notwendige Aufklärungsarbeit zurechtgelegt hatte.

An dieser bedeutsamen Stelle möchte ich die weitesten Kreise der Schulhygieniker auf diese leitenden Gedanken verweisen.

1. *Die Anti-Alkohol-Bewegung ist zur Anti-Genussgift-Bewegung auszubauen, da auch Coffein und Nikotin, namentlich bei der Jugend, erwiesenermassen schwere physische und psychische Störungen hervorrufen.*

Es unterliegt keinem Zweifel, dass die heutige Abstinenz- und Temperenzbewegung sich einseitig auf die alkoholischen Getränke wirft und Coffein und Nikotin völlig übersieht. Wissenschaftliche Untersuchungen u.a. von Virchow, Eulenburg, Reich, Nicolai u.s.w. lehren aber, dass auch die letzteren "Genussgifte," welche Bezeichnung durchaus korrekt ist, schwere Ernährungsstörungen, Erkrankungen des Herzens, Krämpfe u.s.w. hervorrufen und dass sie ausserdem durch die schädliche Beeinflussung des Zentralnervensystems geistige Defekte veranlassen können.

2. *Zur Aufklärung des Volkes über die Giftwirkung von Alkohol und Coffein muss die Bekanntmachung mit den besten Ersatzstoffen—für Alkohol Fruchtlimonade, für Bohnenkaffee Malzkaffee—treten.*

Wer praktisch in der Abstinenz- bzw. in der Temperenzbewegung arbeitet, wird immer vor die Frage gestellt: Was gibst Du mir an Stelle dessen, was Du mir nimmst? Die besten Ersatzstoffe sind jene, welche die bevorzugten Eigenschaften der zu verdrängenden Getränke besitzen. Für die alkoholischen Getränke sind deshalb die kühlenden, erfrischenden, durststillenden, wohlschmeckenden Fruchtlimonaden zu bieten, für Bohnenkaffee und Tee, billiger, nährender, wohlschmeckender Malzkaffee, bei dem von einer Firma, Kathrein's Malzkaffeeabriken, sogar das natürliche Bohnenkaffearoma erzielt wurde.

3. *Angesichts der Bedeutung dieser Aufklärung für die Volksgesundheit und das soziale Leben hat der Staat die Pflicht, sich an der Aufklärungsarbeit zu beteiligen.* Er kann sie am besten vermitteln lassen—

- (a) bei der standesamtlichen Anmeldung der Neugeborenen durch ein belehrendes Merkblatt oder sonstige Belehrung ;
- (b) in der Schule durch unterrichtliche Massnahmen für die Kinder und durch belehrendes Material für die Eltern.
- (c) in der Militärdienstzeit durch Belehrung mit Flugschriften, Vorträgen und durch praktische Gewöhnung.

Dieser leitende Gedanke spricht für sich selbst. Er wird ergänzt durch den letzten Leitsatz :

4. *Unterstützt soll die Aufklärungsarbeit werden durch das öffentliche Vortragswesen, durch Vereine und die Presse.*

Das öffentliche Vortragswesen nimmt in der heutigen Bildungsorganisation eine so bedeutsame Stellung ein, dass es auch an dieser Aufklärungsarbeit nicht vorübergehen kann. Von den Vereinen kommen in erster Linie die populär-hygienischen Vereine, pädagogische Vereinigungen, caritative Organisationen und die Vereine gegen die Auswüchse der Unsittlichkeit in Betracht.

Wird so in systematisch umfassender Weise die Aufklärung hincingetragen in Palast und Hütte, wo immer Kinder ein- und ausgehen, so ist damit *vorbeugende* Arbeit geleistet, die unzählbares und unwägbares physisches und psychisches Elend hintanhält !

EDUCATION IN HYGIENE FOR TEACHERS.

By DAVID SOMMERVILLE, B.A., M.D., M.R.C.P., D.P.H.

(*Abstract.*)

THE doctrine of evolution has illumined every problem of human action and revolutionised thinking. Yet we have largely failed to accept the consequences, and nowhere more than in education.

It is high time that examination of our educational state be made and natural methods adopted.

A time came in the history of animal types when natural selection developed mental advantages rather than physical; and herein lies the explanation of man's place in the cosmos. A vast significance is to be attached by the educationist to the recapitulation of the evolutionary history of the race in the development of the individual. Infancy, with its helplessness, plasticity and adjustment to environment, gives the teacher opportunity. There can be no sound education that is not based on the scientific inheritance of the race.

If, then, during the period of evolution, when the natural education of the child is related alone to the development of its physical activities, what can be said of modern methods of education which, instead of pro-

viding the stimuli appropriate to the development of such activities and the association of the nerve centres controlling them, seek through unreasoning restriction and repression to completely obliterate both? Action, the great object of life, is nipped in the bud.

Until the child begins to feel the need of information, and a desire to put on record something he has done, it is doubtful whether any good is effected by teaching him reading and writing.

Prior to embarkation on the most responsible of all activities—that of teacher—it must be ceded that the candidate should know many things which to-day find no place in his training. Such a training should demonstrate that hygiene must have a place in everything pertaining to infant life, school life, and the after life in the world. That it is not to be regarded so much as a new subject as the scientific application to everyday life of what we know concerning the factors engaged in the highest physical and mental development, and the means of preventing abnormality and disease. There is a great gulf fixed between education and instruction. Education is really beyond legislation, authorities and codes. It can only be done by those possessed of a full and personal knowledge of the subject taught, not second-hand information caught from books, but the practical and experimental work derived from experience in the laboratory.

As the principles of hygiene rest on the basal sciences, chemistry and physics, much judgment is necessary in the selection of types of experimental work. As much of this should be done as the previous training of the students will permit.

In things of hygiene the more the teacher knows of natural science the better, provided he can bring his knowledge to bear upon the phenomena which surround him and which shape or obstruct his relations with other animate or inanimate things, and further provided he can utilise his scientific training in leading his students to observe for themselves facts and their relations to other facts rather than in instructing them in what they should look for and see for themselves.

DISCUSSION ON "TEACHING OF HYGIENE."

Mr. MARSHALL JACKMAN (member of the Consultative Committee of the Board of Education), in opening the discussion, said that he believed the extremists, by endeavouring to introduce the teaching of hygiene as a separate subject, and especially as a compulsory subject, into the curriculum of elementary schools, would not help to educate children to look after their health. Hygiene should be taught incidentally, occasionally, and as fitting opportunity arises in the ordinary routine of lessons, and could be done in almost every lesson and at every hour of the day. Hygiene should be taught in a practical manner to all classes of children, from the youngest to the oldest. Hygiene taught according to a syllabus—and some of the suggested syllabuses were, in his opinion, absolutely absurd—would, except in a few cases, mean instruction in the subject and not education. Children would probably be able to answer questions giving, for example, long lists of various kinds of food that contain certain ingredients which were desirable or undesirable; would write learnedly on proteids, albuminoids, fats and carbohydrates, but probably forget all about them as soon as they left school. For example, even infants, according to the Board of Education syllabus, were to be told to avoid beer and spirits, which were bad for them and which would stop their growth; they were also to be told to eat enough clean, wholesome food, but never to waste any. He ventured to think that the mothers should be taught this and not the infants.

He noticed, in a memorial signed by 14,718 registered medical practitioners, education authorities were asked to include the compulsory teaching of hygiene in the curriculum of public elementary schools, but to encourage the teaching in secondary schools. Why this difference between elementary and secondary schools? He thought in this differentiation they were unwise. If the memorialists had asked for the encouragement of the teaching of hygiene and not to make it a compulsory subject, they would have secured his hearty support. What was wanted in the schools was the training of the children in the value of cleanliness, both of clothes and person, the value of fresh air and the great value of proper breathing, of suitable posture and of healthy and regular exercise, together with chats from time to time on what were the most wholesome foods for them to eat. In the upper classes hygiene might be taken in connection with their science lessons and their composition lessons, and in many other ways which the practical teacher would soon avail himself of. He was quite sure that in this way before long both an adequate and practical education in hygiene would be secured in all schools. At the present time this was largely carried out and in a practical manner. He believed the inclusion in this year's code of the teaching of hygiene in connection with physical training was a great mistake, and would tend to the lessening of the time given to physical training, without any increase in the teaching of practical hygiene.

Herr MAX DALBORG (Stockholm): Successful teaching of hygiene must begin in the first school year and go all through the school life. It is not sufficient to have a few hours in the upper standards or a few words in connection with other subjects. The principles of hygiene must drop into the children's minds during the years when they are forming habits. Hygiene must be on the time-table and a syllabus in the teacher's hands. The speaker had studied the teaching of hygiene in the U.S.A. and regarded their enormous progress to be largely a result.

G. HOGBEN (Inspector-General, New Zealand) hoped that the teaching of the art of hygiene would not neglect the principle put forward by Dr. Helen Putnam, "We must teach children what is true in order that they may do what is right." It would be a grave mistake to only give such instruction as was suggested by the passing incidents of school life, and not to give a simple scientific basis for the most important truths of hygienic living.

Dr. FRANCIS FREMANTLE (M.O.H., Hertfordshire): The education authority of Herts are probably only typical of such authorities in failing to appreciate the responsibilities about to be put on them in school hygiene and the value of this Congress.

For this purpose the fight is not only against ignorance in the schools, but, in the first place, against official lethargy. If we rely only on a general saturation of the curriculum with ideas of hygiene, instruction in hygiene will remain a mere pious aspiration. We must have a definite square hole in the curriculum for this subject; at the same time it should be introduced into the teaching of all subjects.

Dr. CLAUDE TAYLOR (Hampstead): The memorandum of the medical profession in favour of the universal teaching in hygiene and temperance issued a syllabus in response to the inquiries of the Board of Education as to what might be taught. It was too comprehensive for any particular school or any limited period, but was intended as a basis from which education authorities might select or modify their own schemes. Two special points were emphasised; one that, as alcoholism was recognised to be one of the chief a-hygienic factors at the present day, any scheme of instruction must include the principles of temperance and the facts as to the nature and effects of alcohol; secondly, that it was not necessary to defer instruction in hygiene till the later years of school, but that it should be started at the beginning.

Miss MAUD CURWEN (Staffordshire C.C.): Hygiene should be taught consciously or unconsciously by the teacher all through the working hours

of school life. Definite practical teaching was also necessary. There are laboratory courses in England for the teacher of great practical value to the teachers and ultimately to the scholars. Speaking from experience in her own work in Staffordshire, the laboratory methods carried in a simple way into school life, as, for instance, the growth of germs from the hands or the cut surface of a sterilised potato, produced a complete change in the condition of the hands as to cleanliness throughout the school.

The following resolution was submitted by Dr. DAWSON WILLIAMS (for Sir Victor Horsley) and seconded by Prof. W. H. THOMPSON, and carried *nem. con.*, viz. :

"That this section is of opinion that the principles and practice of hygiene should form part of the education of every citizen."

The following resolution was proposed by Mrs. WATT-SMYTH, seconded by Mr. F. E. LEMON, and carried *nem. con.*, viz. :

"That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades."

SECTION VI.

OUT-OF-SCHOOL HYGIENE, HOLIDAY CAMPS AND SCHOOLS.
THE RELATION OF HOME AND THE SCHOOL.

HYGIÈNE EN DEHORS DE L'ÉCOLE, COLONIES DE VACANCES,
ÉCOLES DE VACANCES. RAPPORTS DE LA
FAMILLE ET DE L'ÉCOLE.

HYGIENISCHES VERHALTEN AUSSERHALB DER SCHULE,
FERIENENKOLONIEN UND FERIENSCHULEN, BEZIE-
HUNGEN ZWISCHEN SCHULE UND HAUS.

President.

THE RIGHT HON. LORD KINNAIRD, F.R.G.S., D.L., J.P.

Secretaries.

Mrs. C. W. KIMMINS, Harrow. | E. M. NIALL, M.D., London.

ADDRESS by the RT. HON. LORD KINNAIRD, F.R.G.S., D.L., J.P.,

President of the Section.

I DESIRE to add some words of welcome to those which were given by our illustrious President to the friends who have come to spend some days in London for the Second International Congress on School Hygiene. I welcome their presence here, and we trust and believe that the study of this most important subject during the coming week will consolidate the work, and lead to a further advance in filling up the gaps in our organisation where at present there is weakness.

During these three years that have passed since the first Congress was held at Nuremberg in 1904, great progress has been made in studying the laws of health, and I think the organisers of that conference may be congratulated on the impulse given and the quickened interest in the whole question of School Hygiene, and I think the conference may claim some credit for the real progress that has been made in increasing the facilities by which children of all classes may have the advantage of one or two weeks in the country.

We feel deeply honoured by the presence of so many distinguished men, highly qualified and learned men, from different countries with special knowledge of the subjects before us at this Congress. We hope and believe that their addresses will stimulate and inspire us all to

more active and practical interest in the hygienic conditions under which our children are being educated.

The more earnestly we study the question, the more pressing and serious are seen to be the needs of our great cities, if we are in any way to stem the tide of degeneration.

Some work for the benefit of the people in different countries may be delayed, but the health of our children must not be neglected. This can only be carried out by having the most friendly relations between the parent and the teacher. Some of the papers which will be read will enter into details as to how the relation between the School and the Home may be improved.

I should like here to bear my testimony to the self-denying work done by our elementary teachers, who are always ready to do their utmost to help a scholar either physically or mentally, as opportunity arises.

The statistics given regarding the physical degeneration in London and some of our great cities, calls for the closest attention of all who wish well to their country. When we have the statement made that in three generations the town-bred race dies out in London, it is surely our duty to inquire into the reason for this, and to look round for a remedy. I believe we may approach this subject with a great feeling of thankfulness at the progress which has been made, especially when we remember that forty years ago nothing was being done in this country in any organised way.

I well remember the time when working boys and young men never had a week's holiday in the country. My friend the late Quintin Hogg was one of the pioneers who, about 1870, introduced the scheme of providing a week in the country for working boys and lads, in connection with his Ragged School and Boys' Club, which afterwards grew into the Regent Street Polytechnic.

The opposition of the employers had to be overcome; they had not been accustomed to holidays themselves; they considered that it was not necessary that their errand-boys and apprentices should have a week's fresh air. They soon, however, realised that the employer, as well as the boy, got better and more useful service after the holiday.

Many other organisations in the seventies and later on began to recognise the importance of such a holiday change. Even as far back as 1869, the Ragged School Union had commenced the work which has now so expanded of sending away for a lengthened holiday some of the sick and delicate children, although the scheme for a fortnight's holiday only formally began in 1880.

The Young Men's Christian Association, the Young Women's Christian Association, the Children's Country Holiday Fund, Homes for Working Boys and others, took up the idea, and actively promoted arrangements for holiday homes and camps. This beneficial work soon spread throughout many parts of Great Britain with most satisfactory results and better health, strength, and physique.

Some of our leading public schools also began to have camps for their boys during the summer holidays. Private schools soon followed the example of other people. Clayesmore School, under its energetic headmaster, Mr. Alexander Devine, was one of the pioneer private schools to take up the school camp and holiday camp tour.

As early as 1895 the headmaster made arrangements for his boys to have a tour and a camp, which proved so successful that each year since that time the camp and tour has been a popular holiday institution with the Clayesmore boys. One of their trips was a caravan tour of between 500 and 600 miles. Another school—Trent College—undertook a tour for their school near Derby to Land's End in Cornwall, and the following year they toured from Derby to John o' Groats.

Many other schools have taken up the movement, which is always keenly appreciated by the boys, and looked forward to with eagerness and delight.

'The Universities' Camp for Public School Boys, which was initiated in 1902, has developed into a large organisation, attracting boys from all the public schools in the country.

Whenever I feel doubtful as to the need for advocating the expansion of holiday homes, I take a walk through those parts of London where our great industrial classes live; a few hours spent amongst them will, I think, convince any one of us that holiday homes and camps are really a valuable and important means towards securing the health and efficiency of our young people.

Each year sees some new development of holiday work amongst boys; in 1906 600 public school boys, from all over England, had a camp, under the auspices of the National Rifle Association at Bisley Camp in Surrey. We are expecting this year an increased attendance at Bisley.

Other branches of the subject will be dealt with by some of the friends who have promised to read papers; we may hear how the school buildings, the school playground, and other open spaces may be utilised, with the help of the parents. Reference will be made to the conditions and needs of the whole of child life from the *crèche* up to the time when school life is over.

I trust that a result of this Congress will be that as we compare our experience with those who come from other lands to tell us what they have done, we may gain fresh information, and so be better able to perfect our organisations for the benefit of the children.

I am sure we in Great Britain have much to learn, and I hope no false pride will prevent us from obtaining all the information we can, and adopting every real help from the experience of our visitors.

I trust that genuine practical results may flow from this gathering, and from the interchange of ideas and suggestions as to making healthy and happy the school life of our children.

We need co-operation in this matter and to compare notes with those from other countries of places which they have developed, and I should like to see formed some strong central committee to collect information, and to be in touch with all our schools, so that all town children should, at least every other year, have the benefit of a minimum of one week by the sea or in the country.

We must not impose additional burdens on our elementary teachers; they have often a great deal too much to do, and need their own holiday to recuperate their strength for the next term's work. They will, however, be able to give valuable information to those arranging for the holiday trips of all kinds, and to be sure that every child gets a pass.

In addition to the provision for ordinary children there are special classes who must be provided for. The Ragged School Union, under the

direction of their energetic secretary, Sir John Kirk, has developed a most excellent organisation to send for an annual holiday many hundreds of cripple children. This began in 1890, and has proved most satisfactory; a wonderful improvement in health is often the result, and by patience and care many of them are enabled to earn their own living. I trust that the deliberations of this Section may lead to very useful results under the guidance and blessing of Almighty God.

THE GUILD OF PLAY.

By Mrs. C. W. KIMMINS.

“Work for the children is better than pilgrimage or holy war” (old Moorish proverb).

THERE is a tremendous awakening all over the country with regard to organised play, and this is well, for the time is slowly but surely drawing nearer when more forethought, money and wisdom will be brought to bear upon this most important part of a child's education. So many people are quick to believe in play for children, and will generously support it when undertaken from a philanthropic standpoint, who glance coldly at it when we boldly call it by its real name—education.

The Guild of Play was founded about the same time as the Guild of the Brave Poor Things, for the purpose of brightening and uplifting the lives of children attending the elementary schools, whose only playground in the neighbourhood of the Bermondsey University Settlement seemed the streets. For a merely nominal sum the large L.C.C. school buildings almost adjoining the Settlement were easily secured, and in these rooms, on various nights in the week, hundreds of children attend the Guild of Play meetings gladly. The work of the two guilds is so interwoven that at headquarters it seems difficult to separate them.

The children are chosen from the poorest homes, where, in many cases, one parent is dead; from homes, too, which are the furthest away from any open space, and where the only likely playground for the children is the street.

A May-day of the time of William Shakespeare was given in 1907, and attended by thousands of spectators, and consisted of a May-day pageant, with a march past of villagers, minstrels, Morris dancers, courtiers and ladies of the period, archers, bargemen, the hobby-horse, clown, Maid Marian, dragon, Will Scarlet, Little John, Robin Hood, Tom the Piper, Friar Tuck, Jack-in-the-Green, milkmaids, shepherdesses, etc. A programme of this performance can be seen.

The mothers or guardians of the children at the Guild of Play each session regularly attend a mothers' meeting, held weekly, in which the scheme of play is thoroughly explained to them, many of the same songs and carols sung, and every effort is made to interest the parents in the work of the guild, so that the home life may be brightened by means of it. The insight given by this mothers' guild into the home lives of the children make it a comparatively easy matter to select those to whom the residential vacation school will be of the greatest value.

London children and their parents are quick to appreciate justice; and both mothers and children are most useful in making known those families where there is real trouble. The unselfishness of both mothers and children is one of the most striking features of the guild work.

The guild's primary idea is not so much to take children out of the streets, as to teach them games and amusements which can be played by them all the other days of the week in those very streets where at present they have to live. I say at present, because the bad things about the gutter are not so much the games they play there, but the place in which they are played. Anything out of doors is better than indoor and confined play; and although betting and other evils undoubtedly creep into the street games, yet the play, on the whole, is as innocent as public school games. Gaubling is not limited to the London street child; even at Eton and Harrow the boys have heard of racehorses.

We must plead uneasily for good open spaces; and no one gainsays the superiority of green grass over mud, of wide spaces over stifling courts and alleys, and of fresh air over public-house fumes. Only we must be just and not make misleading statements, painting the life of the London child all grey, and the well-to-do always the reverse. London children play by instinct; they are born philosophers, cold and wet and even hunger rarely damping their spirits. They dance and sing and invent with the most delightfully keen imaginative power, while for mimicry and sheer humour they can ill be beaten. Rather for their pluck and rollicking determination to be happy, let us help them all we can, realising that we learn from them far more than we teach, and receive often more than we have to give. For large-heartedness, unselfishness, sheer British pluck and straightforwardness I commend you to the London street child, and only teachers in the schools and those who live in Settlements and visit in the homes really and truly know what lies hidden deep down under the slum crust of these children. Those who do know say without hesitation, "Give them the best, not only in school, but out of it; and when you have given the means, the best work will have been done." It is a debatable question whether the children themselves cannot best use these means; the very fact of their having got so much out of the unattractive streets in which they live should lead us to trust them largely to use the means we provide.

The Guild of Play text-book or hand-book to organised play has been published by Messrs. Curwen and Sons, of Berners Street, W., price 5s., at the request of many who apparently think that the methods used may be found of service to workers among children elsewhere.

Any visitor is at once struck by the happy orderliness of all the play. No trace of street roughness enters the school buildings, which, for the time being, become the children's nursery and drawing-room. Each child enters with an old-world courtesy, and leaves at the end of the evening in the same way. During the telling of the fairy tale the hush can almost be felt, and even in the merriest games there is no hint of rudeness or other excitement.

Many I.C.C. teachers are regular visitors, and give great help in many ways; and no Guild of Play is complete without some of the old-fashioned singing games or folk-songs, of which the children know so many.

We fully recognise that to give children happy hours is a glorious

thing, but if, at the same time, we can help to make life, ordinary, hungry life, beautiful and good to them, if we can help the tiny seeds of hope and love and faith and self-control to grow, if we can lure forth ideals, surely *this* is true education.

DISCUSSION ON "ORGANISED GAMES."

Miss MARIE SHEDLOCK (London) made a special plea for story-telling as appealing straight to the imagination of the child. She deprecated strongly the tendency to moralise in story-telling, which was like tying a flower to a stalk instead of letting that flower develop naturally from the stalk. Morley says, "Moralising in a fairy tale is like the snoring of the ass in Titania's lap."

Mr. PETT RIDGE (London), as president of a branch of the Children's Happy Evenings Association, said the movement was never more spirited, more lively, more energetic than at the present moment. They had supplied the evenings to nearly all the London schools which required them, and they were determined not to overlap other societies, or to interpose where parents and children wished to cultivate the rights, pleasures and duties of domesticity. The voluntary assistance which others apparently could not obtain answered readily to their call. He claimed they had induced the children to understand that amusement did not consist of a series of noisy quarrels; they had encouraged cleanliness, they had stimulated self-respect and thus improved behaviour in school hours. He called special attention to the fact that all this had been done without the expense of a single penny to the ratepayers; he earnestly begged the section to realise the enormous amount of good nature discovered and encouraged by the association, and the fine results obtained amongst the wonderful little people of London, for whom life was a comedy—or a tragedy—on which the curtain had but just been lifted.

Dr. GULICK (New York) spoke of the work of the Playground Association of America, showing how its work was as much one of finding suitable plays and games for the conditions of modern city and country life as well as the preservation of spaces for play by the children.

Mr. L. COPE CORNFORD (London) observed that there were those who advocated voluntary effort in connection with organised games, and those who proposed their institution by official means. He desired to refer his audience for a moment to first principles. In trying to ensure the welfare of the children of the poor we were dealing with forces over which, at present, we had very little control. The result of a hundred years of purely industrial civilisation was an immense aggregation of poverty in cities. The consequent evils were the penalty we had to pay. The object of the Congress was to discover how best to rescue the children from those evils. Upon that we were all agreed. When, as Henrik Ibsen said, the whole population became aristocrats (mental and spiritual aristocrats), the problem would be solved. The institution of organised games was one aspect of the endeavour to arrive at that solution. It was suggested that public money should be used. But there were other and even more important uses for the limited sum available. Moreover, the personal nature of voluntary work, which was already organised, fulfilled the need as paid service could never fulfil it. The official system of education was largely a failure; why extend that system, to the displacing of voluntary service, which so admirably succeeded?

RAPPORT SUR LES CAMPS DE VACANCES.

Par M. le CAPITAINE POLVLIET, d'Amsterdam.

IL y a une vingtaine d'années les élèves du lycée d'Amsterdam eurent l'idée de faire des exercices militaires pendant leurs heures disponibles. L'administration militaire mit entre autres à leur disposition des instructeurs et des armes. Un grand nombre de jeunes gens ne tardèrent pas à se réunir pour prendre part à ces exercices et un essai de campement fut fait pendant les vacances d'été. Le premier camp installé par eux réussit pleinement.

On renouvela l'expérience chaque année ; et c'est ainsi, en fait, que fut fondé en Hollande le premier camp scolaire.

Quelques années après, l'administration militaire décida que les jeunes gens qui, avant d'être appelés sous les drapeaux, prenaient part à des exercices militaires, bénéficieraient, sous certaines conditions, d'une réduction de leur temps de service. Pour entrer dans les cadres de réserve il fut même établi un examen permettant de constater leur degré d'habileté et leurs connaissances militaires. Ces mesures eurent pour suite d'augmenter le nombre des jeunes gens prenant part aux exercices : les élèves des collèges et lycées de toute la Hollande eurent en effet le droit, en vue de leur préparation à cet examen, de faire partie du camp. Par suite du programme exigé, la durée de quinze jours était portée à plus de trois semaines.

Voici quel était le règlement de ce camp :

L'État assurait le nombre suffisant des instructeurs nécessaires : un lieutenant chargé du commandement et de la direction des exercices, un médecin militaire, et une vingtaine de militaires : sous-officiers, soldats, cuisiniers, etc. L'État fournissait également le terrain, les tentes, couvertures, médicaments, pansements, aménagements des tentes, armes, munitions, etc. Tous les frais de nourriture, de couchage, de transport des fournitures de l'État devaient être supportés par les jeunes gens faisant partie du camp. Pour une durée de campement de vingt-sept jours, la somme de 22 florins par personne parut en moyenne suffisante.

Voici comment étaient composés les menus : le matin, au déjeuner, alternativement gruau au lait et au sucre, pain beurré, fromage et thé, ou soupe au riz et viande ; vers midi et demie, pain beurré, fromage et café ; vers 5½ heures, le dîner, se composant de viande, de légumes et de pommes de terre et tous les deux jours d'un dessert ; le soir, du thé avec, si on le désirait, du pain. L'introduction dans le camp des liqueurs alcooliques était strictement interdite, sous peine de renvoi immédiat.

Ce menu avait été établi en prenant comme base la nourriture de la majorité des ménages bourgeois hollandais. Étant donné la courte durée de campement on n'avait pas jugé utile de prendre le menu du soldat en campagne.

L'uniforme n'était pas obligatoire. Les jeunes gens recevaient les indications nécessaires concernant l'habillement, la chaussure, les objets indispensables pour la toilette. On avait évité tout ce qui n'était pas

strictement nécessaire ; chacun devait avoir une malle pour contenir ses affaires ; ces malles étaient placées dans les tentes.

Chaque tente comprenait six à huit personnes. Cette condition sauvegardée, le choix des tentes était permis. Les jeunes gens pouvaient également, dans les limites du possible, se grouper par ville ou par école. Les jeunes gens d'une même tente éalisaient un d'entre eux comme chef de tente. Quatre à six tentes étaient sous le commandement d'un sous-officier de l'armée désigné par le commandant du camp.

Afin de remplir le programme des exercices militaires, voici quel était l'emploi du temps quotidien :

5 heures . . .	Réveil.
5½	Thé.
5¾ à 6½ . . .	Théorie.
7	Déjeuner.
7¾ à midi . . .	Exercices coupés par un quart d'heure de repos.
12½	Deuxième repas.
1½ à 4½ . . .	Exercices de tir.
5	Dîner.
6	Thé.
6 à 6¾ . . .	Théorie, suivie de sports, jeux, bicyclettes, excursions, réunions à la cantine, etc.
9½	Retraite.

Le programme, selon les besoins, était modifié pour les excursions, les marches, les exercices en campagne, les exercices de nuit.

Les repas étaient pris en commun dans la cantine, où se donnaient également, lorsque le temps était mauvais, les leçons de théorie. Mais autant que possible ces leçons étaient données en plein air.

Les jeunes gens eux-mêmes étaient chargés de tous les services d'intérieur, corvées, etc. Quoique âgés de quinze à dix-huit ans, et malgré leurs connaissances théoriques, ils témoignèrent en général d'une inaptitude et d'une maladresse assez grandes ; il semblerait qu'ils n'aient pas été exercés à se servir de leurs dons d'observation. On leur donnait par exemple, pour l'aménagement de leurs tentes, des planches et des clous, afin qu'ils puissent placer les différents objets d'après l'indication de leurs sous-officiers. Ils ne pouvaient guère, sans aide, venir à bout de ces travaux, non plus que du dressage des tentes ou d'autres occupations les plus simples dont on les chargeait. Il arriva même habituellement que les premiers malades, soignés par le médecin, étaient des jeunes gens qui s'étaient blessés légèrement soit dans ces travaux, soit dans l'épluchage des pommes de terre. En un mot, ils étaient maladroits. A ce point de vue une différence typique saute aux yeux lorsque l'on a affaire aux recrues appartenant aux classes des travailleurs et des paysans. Ces derniers ont eu beaucoup moins de connaissances à acquérir, mais ils sont infiniment plus " débrouillards." Les élèves des collèges et des lycées paraissent ne jamais avoir fait usage de leurs dix doigts ; presque toute l'éducation se résume pour eux en connaissances théoriques.

Seuls les jeunes gens s'occupant beaucoup de sports faisaient exception à la règle. C'est en raison des expériences faites sur ce terrain, tant au camp de Laren que dans nos casernes, que je me déclare partisan, sans aucune réserve, de l'introduction des jeux de sport et de gymnastique

aussi bien que des travaux manuels dans toutes les écoles, dans celles surtout fréquentées par les élèves des classes supérieures de la société.

Mais reprenons notre sujet.

Aussi en premier lieu et en second lieu on s'efforçait de leur apprendre à se tirer d'affaire eux-mêmes. Dans chaque domaine on tâchait de former une petite société où le principe de services et d'aide mutuels était appliqué. Cette grande vertu humaine et sociale est dans l'éducation trop négligée, et son développement est trop laissée à l'abandon. C'est pourquoi le camp devait être par les jeunes gens regardé comme une grande famille dans laquelle on devait tout d'abord se soutenir mutuellement. Ils apprenaient à mettre l'intérêt général au-dessus de l'intérêt particulier. La bonne camaraderie y était la première vertu. Les fournitures de l'État devaient être traitées comme si elles avaient été la propriété de chacun. Un exemple nous montrera combien ce principe était respecté. Durant six ans on confia pour tout le camp et à des jeunes gens totalement inexpérimentés, une centaine de fusils à tir rapide, qui furent employés par tous les temps pendant toute la durée du campement. Or chaque soldat sait par expérience combien les armes ont à souffrir dans les grandes manœuvres, et pourtant à leur remise on n'eut à enregistrer aucune plainte concernant un dommage. Il en était de même pour les autres fournitures prêtées par l'État.

Que l'on n'oublie pas que, à cet âge, les jeunes gens sont assez généralement "sans soucis."

Pendant la durée de campement ces jeunes gens, n'étant pas soldats, n'étaient pas soumis aux lois et règlements militaires ; la discipline et les punitions n'existaient donc pas comme par exemple on les trouve dans l'armée. A leur arrivée, les règlements et décisions leur étaient lus et expliqués ; il leur était surtout recommandé de s'aider mutuellement à suivre ces prescriptions dont le bien fondé leur était démontré. Toujours les jeunes gens ont paru se soumettre de leur plein gré aux prescriptions et règlements et ont rivalisé dans leur observance. A l'inverse de ce qui arrive presque journellement dans les casernes, pas une seule fois, pendant sept ans, je n'ai eu à réprimander ou à punir pour des infractions au règlement. Les prescriptions étaient exécutées avec la même exactitude que dans un camp militaire. On s'efforçait, sans le dire, d'être de vrais "troupiers." Et pourtant, la plupart de ces jeunes gens étaient—par définition—des élèves des collèges et lycées, pleins de vie et de gaieté, et tout joyeux d'avoir passé brillamment leur examen de fin d'études. Il y en avait chaque année parmi eux qui avaient été d'élèves quelque peu indisciplinés. La façon de vivre au grand air, l'emploi du temps, le sentiment de solidarité surtout, c'étaient là autant de freins ou de soupapes permettant à cette folâtrerie de s'échapper régulièrement.

Cela nous amène tout naturellement à la deuxième partie de notre sujet, c'est-à-dire à la réponse à la question : Comment pourrait-on utiliser un campement semblable pour faire passer d'une manière agréable en même temps qu'utile et hygiénique tout ou partie des vacances d'été ?

Pour les jeunes gens qui devront servir, le problème est bien simple, et le camp, décrit plus haut, peut être considéré comme une préparation aux exercices militaires. Il en est tout autrement si l'on considère la vie de campement d'un point de vue autre que le but spécialement

militaire. Alors, il emprunte sa valeur en premier lieu à l'occasion qu'il offre de développer systématiquement le sentiment de la solidarité et de la responsabilité, partie de l'éducation si nécessaire et pourtant si souvent négligée. En deuxième lieu la santé est favorisée par la vie au grand air. Pour remplacer les exercices militaires qui absorbent en général une grande partie du temps disponible, il faut pourtant trouver autre chose. Et, sans aucun doute, c'est possible si les professeurs accordent leur collaboration en venant à tour de rôle passer quelques jours au campement. Ils se chargent alors de la direction des promenades et des excursions. Ces dernières surtout offrent au professeur d'histoire naturelle un terrain d'étude aussi large qu'inépuisable. En effet il m'a paru au camp de Laren que malgré une connaissance relativement très étendue de la zoologie, de la botanique et de la géographie théorique la connaissance pratique était extrêmement bornée. La plupart des jeunes gens par exemple ne savaient pas reconnaître les arbres, arbustes ou plantes les plus communes, pas plus que les plantes cultivées. Pour ce qui est des oiseaux ils ne pouvaient ordinairement pas distinguer, c'est le cas de le dire, une pie d'une grive ; combien peu pouvaient déterminer les points cardinaux, trouver l'étoile polaire ou s'orienter sur le terrain ! Oui, en théorie, tout allait bien, mais en pratique — ! Le don d'observation, malgré un esprit critique souvent très développé, était également des plus minimes. Si par conséquent l'on commence, dans un campement semblable, à accorder une large place aux excursions, on aurait déjà rempli le temps d'une façon utile et agréable.

En deuxième lieu les services de garde, d'intérieur et de ménage. Ceux-ci doivent être en principe assurés par les jeunes gens eux-mêmes ainsi que l'installation du camp et son nettoyage régulier. La faculté de se débrouiller et le sentiment de responsabilité se développent ainsi d'une manière utile et pratique. Je sais par expérience que les jeunes gens aiment à se charger des services intérieurs. Chaque jour une partie est de garde contre incendie, vol et désordre. Tous doivent aider chaque matin à nettoyer et à mettre en ordre le camp et les tentes. Il faut aller chercher de l'eau, nettoyer les légumes, peler les pommes de terre. Un certain nombre va dans les environs faire les achats de vivres pour le jour suivant ; quelques-uns aident à préparer les mets, à répartir les portions. Tout cela naturellement à tour de rôle. Tous les jours le programme comporte des exercices de gymnastique et de sport. Le médecin de service fait un cours sur les éléments de l'hygiène et indique quels sont les premiers secours à donner en cas d'accidents. Ce sont des sujets qui réunissent toujours un auditoire attentif et reconnaissant. Du reste dans un camp on peut pour ce qui concerne l'hygiène joindre la pratique à la théorie. Je me borne ici à quelques sujets principaux pour indiquer de quelle façon, sans véritables exercices militaires, le temps disponible peut être employé de manière utile et agréable. Quand même le temps resterait défavorable pendant plusieurs jours, il y a assez de sujets de causeries à l'occasion des excursions qui ont été faites, et l'on profite des moments de beau temps. Là aussi c'est la direction qui importe.

Reste la question : De quelle manière de semblables camps scolaires devraient-ils être organisés ?

On cherche d'avance dans quelque belle contrée de la patrie des terrains de campement bien secs, et on examine, également d'avance, la

qualité de l'eau potable disponible. Dans ces camps viennent des groupes d'élèves d'un certain nombre de collèges et de lycées, des jeunes gens d'environ du même âge, mais d'au moins quinze ans. Ils camperaient pendant dix à quatorze jours consécutifs sous la direction de quelques-uns de leurs professeurs. De préférence cela ne doit pas se faire dans les environs de leur résidence habituelle. Les écoles du Sud campent dans le Nord et *vice versa*. Le premier groupe part immédiatement après le commencement des vacances d'été. Sur le terrain choisi, se trouvent, par les soins de l'administration militaire, les tentes (non dressées) ou les baraquements démontables et en outre un certain personnel militaire ; par exemple un officier, un médecin, un ou plusieurs sous-officiers d'administration et quelques cuisiniers militaires et soldats de corvée. On profite de l'expérience de ce personnel pour faire dresser le camp par les *jeunes gens eux-mêmes*. Ce principe de "*self help*" est appliqué durant toute la durée du campement et le personnel militaire sert seulement à guide par son expérience. C'est pourquoi ce personnel militaire est désirable au commencement. Une fois quelque expérience acquise à cet égard, on pourrait s'en passer.

Les jeunes gens sont répartis en groupes et par classes. Les classes se choisissent parmi eux un directeur, chef de classe. Ce chef est assisté d'un professeur. Les jeunes gens d'une même tente se choisissent également un commandant parmi eux. Du reste le service d'intérieur est organisé militairement, avec suppression de toutes les règles qui n'ont pas de but pratique et qui ne résistent pas à l'examen du bon sens. Il faut aussi peu que possible ennuyer les jeunes gens avec des formalités pédantesques. Il faut que le sentiment reste vif que le campement est une récréation, au même titre que les colonies hygiéniques et de vacances le sont pour des enfants plus jeunes. Or l'on sait combien, dans ces colonies de vacances, on a réussi, grâce aux conducteurs et conductrices, à renforcer l'utile en y joignant l'agréable.

HOLIDAY CAMPS IN SPAIN.

LEGISLATION.—ORGANISATION.—SPANISH HOLIDAY CAMPS.

By DR. SIMARRO (*Spanish Delegate*).

SPANISH LEGISLATION FOR CAMPS.

ROYAL decree of July 26, 1892, encouraging the zeal of official corporations and of private individuals in favour of so charitable and patriotic a work, etc.

Circular of the Board of Education, February 15, 1894 (this is the chief provision in the matter), in which the character and importance of the institution are determined, and in which concrete rules are given for its organisation and working.

Decree of the Board of Education, October 28, 1894, arranging for the publication in the "*Gaceta de Madrid*" (Madrid Gazette) of

the physical results of the camps, and that all those who receive State help render an account to the Board of the results obtained.

Royal decree of June 26, 1895, declaring that masters who have stood to the front in these camps, should receive special recognition.

The Government allotted, in the first instance, in the State budget of 1894-5, the sum of 20,000 pesetas.

ORGANISATION.

1. *Camp Preparation.*—The Museo Pedagógico has preferred the sea-type of camp, because, given the altitude of Madrid, the change produced in the child's organism would be more forcible and rapid by passing from that altitude to that of the sea than from slightly higher altitudes to that of the capital; the choice of the port of San Vicente de la Barquera (Santander) is due to reasons of an economic character, and to the facilities which, by reason of old connections, were to be found in many of the people of the town. The members are elected from among the public schools of the University district (where the Museo Pedagógico is situated), and attention is paid to the following conditions:—

(1) That the age of the members vary between nine and thirteen years, so that they may help themselves and one another, and that there may be a certain homogeneity amongst them.

(2) That none be suffering from a contagious disease.

(3) That, above all, attention be given to anæmia, impoverishment of the blood and scrofula.

(4) That those most in need of treatment be proposed who are the poorest, and not the most diligent.

The selection is always made by doctors, who do this service gratuitously. The camps are mixed (for both sexes), from the fifth (1891); the sixth was not so by reason of difficulty in regard to the choice of the staff. This is formed in each camp from amongst the individuals of the Museo, accompanied by teachers of the Madrid public schools, or of those of the provinces, or by private teachers. Their services have always been gratuitous. The members go three consecutive years; this experience has advised as obtaining best results for the health of the boys (children). The outfit is at the expense of the members. The Museo undertakes it when judged necessary by the poverty of the families.

2. *Travelling.*—Third class, in reserved compartments. The Museo has always received the greatest facilities from the railway companies.

3. *Life in the Camp.*—For many years life was spent in houses situated in the higher quarters of the town of San Vicente de la Barquera. At present the camp is installed in the house specially built for holiday camps by the corporation of "Old Pupils of the Institución libre de Enseñanza," and which the latter gives gratuitously. This house is situated some one mile and a quarter (two kilometers) from the town, between the latter and the sea, and with a splendid panorama.

4. *Rules.*—Rise at 6 a.m. Wash and dress. Set in order the dormitories to better facilitate the servants' work. Breakfast: pint of milk and a French roll (about six ounces). Work: drawing up of diary, and observations with regard to same, though without the character

of actual school class-work. At 10 a.m. to the beach, where they stay until 1 p.m. Bathing at 12.30. Dinner: soup (the most usual in the country), a dish of boiled beans, potatoes and cauliflower, with fat, boiled meat, bacon and sausage, roast meat. Dessert: cheese and fruit; pudding on Sundays; no wine. Cleansing of month. Games. Teachers play with scholars. At 4 p.m., walk or excursions. Pupils never go in a body; and these are utilised as classes, given with the greatest liberty. Return to house. Singing. Supper: boiled vegetables, meat or fish. Dessert. Cleansing the mouth. At 10 p.m., bed. Bedrooms have windows always open. Upon returning it is usual for an excursion of longer duration to be made by the last camp, at which the pupils assist, to one of the villages around San Vicente.

SPANISH HOLIDAY CAMPS.

1. MADRID. (a) *Museo Pedagógico Nacional*.—These camps were inaugurated in 1887, and have continued without interruption. At the present moment the summer is being passed by the twenty-first at San Vicente de la Barquera (Santander). This camp is made up of thirty-five members (seventeen boys, and eighteen girls), under the direction of four teachers (two men and two women).

Resources.—Funds. Of these some are constant. First, from H.M. the King (and before, her Majesty the Queen Regent); second, from the Board of Education. Others have been received for some years (from the Home Office, Provincial Deputation, Municipality of Madrid); gifts from societies (Association for the Teaching of Women; Pawnbrokers' Association). During the first years private subscription was also made.

(b) *Society for the Protection of Children*.—(1) 1893, at Cavañal (Valencia), thirty-seven children of both sexes from Madrid and forty more from Valencia. Director, Mr. Eugene B. Mingo (director of the Jardines de la Infancia, Madrid) and two lady assistants, and several other persons who lent themselves to this work.

The children's travelling and the director's board were paid for by the society. The installation and feeding of all the members were carried out at the expense of the people of Valencia. (2) 1896 and following years, camps to the warm baths of Trillo (Guadalajara), thirty children. The first year they were accompanied by Doctors Tolosa Latour and Lozano Ponce de Leon. In the succeeding years they have been accompanied by Sisters of Charity, and the director of the establishment gives attention free.

(c) *Corporation of Old Pupils of the Institucion libre de Enseñanza*.—1894, (1) camps at Miraflores de la Sierra (Madrid), ten children with two directors and an assistant.

2. Camp, 1897, at San Vicente de la Barquera (Santander). The succeeding ones have always been installed at this place. In the year 1901 there were two camps formed. Possesses own house, built in 1901. In addition to these there are about twenty other towns or districts which regularly form such vacation camps.

LES COLONIES SCOLAIRES DE VACANCES POUR LES ENFANTS DES ÉCOLES PRIMAIRES DE LA VILLE DE PARIS.

Par MM. les Drs. HENRI et LOUIS GOURICHON, Paris.

Au moment où de tous côtés s'organisent des colonies scolaires de vacances, il nous paraît intéressant de donner un rapide aperçu de leur fonctionnement à Paris, pour les enfants des écoles primaires municipales.

Les premières colonies eurent lieu en 1876, en Suisse, sous les auspices de M. le pasteur Bion. En 1881, M. Lorriaux, émerveillé des résultats obtenus, créa en France "l'Oeuvre des Trois Semaines," œuvre privée qui tirait ses ressources de dons, de cotisations. En 1883, M. Cottinet, administrateur de la Caisse des écoles du IX^e arrondissement, organisa de toutes pièces la première colonie scolaire municipale, dont les résultats furent également des plus heureux pour la santé des jeunes enfants.

"Les colonies de vacances," disait M. Cottinet dans son rapport, "ne sont pas une aumône, elles sont une résurrection. En un mois, elles donnent plus d'un an de vie à un enfant du peuple."

Le Conseil municipal, intéressé par ces diverses tentatives, diminua le crédit qu'il accordait aux caravanes scolaires destinées à récompenser les élèves les plus méritants et subventionna les caisses des écoles qui entraient dans cette nouvelle voie. En 1887, sur un rapport de M. Hovelacque, il supprima même complètement cet article du budget pour allouer des subventions de plus en plus élevées aux colonies scolaires. Actuellement, chaque année une somme d'environ 250,000 fr. leur est affectée.

Sous l'impulsion d'actifs philanthropes et avec le concours de généreux donateurs, les colonies scolaires subirent une évolution rapide et, une dizaine d'années après la première tentative du IX^e arrondissement, tous les arrondissements de Paris organisaient des colonies de vacances, non plus pour les enfants travailleurs, mais pour les enfants pauvres et malades. Le nombre des enfants envoyés gratuitement hors Paris augmente tous les ans et, en 1905, 6,500 enfants (filles ou garçons) ont bénéficié d'un séjour à la campagne d'au moins vingt et un jours. Le résultat est déjà magnifique, mais il est encore au-dessous si l'on compare ce chiffre à la population scolaire nécessiteuse et surtout si on le rapproche des statistiques fournies par les œuvres privées ou confessionnelles, sans vouloir parler des œuvres analogues à l'étranger, parmi lesquelles la France n'arrive qu'en sixième ligne.

Les colonies scolaires municipales ont chacune un fonctionnement autonome (circulaire de M. le Préfet de la Seine de février 1904) ; elles sont alimentées par les caisses des écoles et largement subventionnées par la Ville de Paris. Il en résulte que chaque arrondissement a sa façon de procéder, ce qui gêne un peu pour un exposé général. Cependant, à quelques détails près, la marche est la suivante :

Un mois et demi avant les vacances, tout enfant pauvre de dix à douze ans, malingre, chétif, mais non malade et n'ayant jamais fait partie antérieurement d'une colonie, est susceptible d'être désigné. A cet effet, le chef de famille fait une demande, dans laquelle il indique tous

les éléments qui peuvent renseigner sur sa situation matérielle (profession, gain journalier, montant du loyer, durée du domicile à Paris, nombre d'enfants, etc.) La Commission de la Caisse des écoles, s'appuyant sur ces données, fait un choix d'enfants indigents ou nécessiteux les plus intéressants qu'elle soumet à l'examen des médecins-inspecteurs des écoles.

Ceux-ci procèdent à cet examen, émettent leur avis et désignent la colonie—montagne, plaine ou maritime, quand ils en ont la faculté—qui est le mieux appropriée à l'état de santé de l'enfant. Le choix définitif étant arrêté par la Caisse des écoles ou par le médecin, suivant les arrondissements, un dernier conseil de révision a lieu, avant le départ, au cours duquel sont notés sur une fiche le poids, la taille, le périmètre thoracique. Au retour, les mêmes observations sont relevées sur une fiche.

Le but de la colonie est donc de faire profiter, à l'égal des enfants plus fortunés, les enfants pauvres non malades, des écoles primaires, d'un séjour à la campagne leur permettant de revivifier leur organisme, flétri par une habitation malsaine, une nourriture insuffisante, à la veille de succomber à l'atteinte de la tuberculose. Ainsi comprise, la colonie devient une arme précieuse dans la lutte sociale contre ce terrible fléau, dans l'œuvre de la préservation de l'enfance, et l'hygiéniste doit en assurer la direction.

Comme nous l'avons vu, chaque arrondissement organise sa colonie comme il l'entend. Il en résulte qu'ici le choix est fait entièrement par le médecin, toutes autres considérations mises à part, et que là, le médecin entendu mais non suivi, la désignation est entre les mains des commissions qui, malheureusement, ne sont pas indifférentes aux influences extérieures n'ayant aucun rapport avec la santé de l'enfant. L'idéal serait de faire la part bien définie de chacun : aux caisses des écoles, le soin de choisir, parmi les demandes, les plus intéressantes, d'arrêter les lieux de séjour suivant leurs ressources, et tous les détails d'organisation (voyage, alimentation, surveillance, etc.) ; aux médecins, la faculté entière de sélection des colons et leur répartition suivant les climats. Est-il nécessaire de rappeler qu'il ne s'agit plus de voyages, mais des colonies scolaires dont le but est nettement hygiénique ?

Pour les enfants des écoles de la ville de Paris, le placement familial préconisé par de nombreuses œuvres privées, et en particulier l'œuvre stéphanoise, n'est pas possible ; le type de colonie, de placement en commun dans des établissements spéciaux est seul pratique, facile à organiser, à surveiller, bien que le prix d'entretien soit un plus élevé. L'âge des enfants (dix à douze ans) ne saurait être modifié sans inconvénient ; il leur faut s'occuper des soins de toilette, pouvoir excursionner, etc. Plus jeunes, ils seraient une cause d'embarras et de responsabilités dont beaucoup de maîtres hésiteraient à prendre la charge. Pour la même raison les infirmes, les malades nécessitant des soins spéciaux, les contagieux, les nerveux (épilepsie, incontinence d'urine, etc.) doivent être éliminés, ainsi que les mauvais sujets qui pourraient apporter la perturbation dans la colonie.

L'intervention médicale se justifie plus encore quand il s'agit de répartir les colons suivant leur tempérament et les lieux de séjour choisis par les municipalités. Il est un fait avéré, maintes fois signalé, que tous les enfants ne supportent pas indifféremment le climat marin ou de

montagne. Certains même, au lieu de prendre du poids, maigrissent et reviennent en plus mauvais état. C'est une tâche très délicate de sélectionner les colons, qui sera grandement facilitée par la création de la fiche sanitaire individuelle, car à l'heure actuelle, il est difficile, dans les quelques minutes nécessitées par l'examen rapide du colon, de connaître à fond son frêle organisme.

La durée moyenne du séjour à la campagne pour les colonies parisiennes est de trois à quatre semaines. Elle nous paraît suffisante ; l'enfant a le temps de s'acclimater, de revivre une vie nouvelle, de bénéficier de sa cure d'air et d'alimentation. Plus longue, la colonie ne répondrait plus à son idée première ; elle deviendrait un moyen thérapeutique et rentrerait dans le cadre des colonies sanitaires à long séjour, permanentes (maritime, montagneuses, etc.). La distinction doit donc être bien tranchée entre ces deux sortes de colonies. D'ailleurs, en trois semaines, l'organisme de l'enfant reçoit un coup de fouet, il se développe, il augmente de poids et les résultats se maintiennent plusieurs mois après le retour de l'enfant, malgré les conditions de mauvaise hygiène et d'insalubrité de son milieu parisien. Pour apprécier ces améliorations, il faut une *fiche de colonie*, simplifiée, uniforme, mais une fiche distincte de la fiche sanitaire individuelle. Les raisons en sont nombreuses. Celle-ci est spéciale à tous les enfants des écoles de la ville ; essentiellement médicale, confidentielle, elle relate des épisodes morbides de la période scolaire et doit rester à l'école. Mais elle sera consultée avec fruit par le médecin pour la désignation de l'enfant.

La fiche de colonie, réduite aux trois éléments : poids, taille, périmètre thoracique—avec le coefficient de robusticité si l'on veut—peut être remplie par des maîtres, consultée par les commissions des Caisses des écoles, par le Conseil municipal qui désire se renseigner sur les résultats obtenus au point de vue physique ; enfin elle ne touche que quelques enfants. Elle existe sous cette forme dans plusieurs arrondissements et est commentée dans les rapports des directeurs de colonies.

On ne peut donc accepter la création d'une fiche compliquée dans le genre de celles qui ont été proposées au Congrès de Bordeaux, par des représentants d'œuvres privées dont le but (thérapeutique) est tout différent de celui des colonies municipales parisiennes.

La fiche des colons parisiens peut donc se borner aux constatations, à l'aller et au retour, des trois points suivants : poids, taille, périmètre thoracique, mais faites suivant une méthode uniforme d'examen.

Le poids, synthèse du développement de l'organisme, doit être pris avec une bascule contrôlée à chaque séance ; pour les garçons avec chemise, bas et pantalon ; pour les filles, avec chemise, bas et jupon, autant que possible le matin à jeun.

La taille doit être notée de préférence le matin, le sujet étant pieds nus et dans la position du soldat sans armes.

Le périmètre thoracique constitue la partie la plus difficile. Il est apprécié très différemment suivant le procédé employé et peut donner lieu à des écarts notables ; ainsi s'expliquent des augmentations de trois à quatre centimètres obtenus après un mois de séjour à la campagne et dues à des mensurations variables. Sans vouloir entrer dans la discussion des diverses méthodes, nous nous rallierons à celle qui a été exposée par M. le Dr. Méry, qui nous paraît la plus pratique. La mensuration, pratiquée pendant le repos respiratoire, l'enfant ayant les bras abaissés,

est faite, pour les garçons au niveau des mamelons ; pour les filles, au niveau de l'appendice xyphoïde. Pour plus d'exactitude, il serait préférable de se servir du centimètre de Rosenthal, formée de deux moitiés symétriques graduées de 1 à 75. Le point de repère médian serait placé sur les apophyses épineuses et les extrémités ramenées sur les deux côtés de la poitrine.

Il nous paraît inutile d'insister sur l'importance de ce signalement anthropométrique ainsi établi, qui, outre les documents scientifiques fournis au médecin, pourrait guider les municipalités sur le choix ultérieur des lieux de séjour.

Telle est la colonie scolaire dont profitent, à titre gratuit, les enfants pauvres des écoles primaires, pendant les mois de vacances. Certains arrondissements ont créé des colonies permanentes, à long séjour, maritimes ou de montagnes, pour les enfants débiles, maladifs ; elles sortent du cadre de cet article.

La ville de Paris, les caisses des écoles accomplissent donc une œuvre de généreuse philanthropie du plus haut intérêt, en tendant la main à ces petits déshérités qui souffrent injustement des misères d'une agglomération toujours croissante.

COLLÈGES DE SANTÉ, COLLEGES CLIMATIQUES POUR ENFANTS DÉBILES.—CLASSES SPÉCIALES POUR ÉCOLIERS CONVALESCENTS OU TEMPORAIREMENT ARRIÉRÉS.

Par le Dr. PAUL LE GENDRE,
Médecin des Hôpitaux de Paris.

I.

PENDANT longtemps les directeurs des établissements scolaires ne se sont inquiétés que des enfants sains d'esprit et de corps. Ceux qui avaient le malheur de naître infirmes, intellectuellement ou physiquement, ou de le devenir avant l'âge scolaire, perdaient tout droit à l'instruction. Cette calamité sociale a été peu à peu combattue par de généreux esprits, qui ont patiemment imaginé des méthodes pour instruire les aveugles, les sourds-muets, les anormaux. Une lacune reste encore à combler dans presque tous les pays pour assurer la régularité des études à certaines catégories d'enfants, qu'une santé débile ou de longues maladies tiennent trop souvent de nos jours écartés des établissements d'instruction, quoique leur intelligence ne soit pas amoindrie ou ne le soit que temporairement.

Lorsque ces enfants appartiennent à des familles riches, les parents leur assurent l'instruction au moyen de précepteurs ou de professeurs particuliers ; encore perdent-ils le bénéfice de l'émulation si utile que fait naître l'éducation en commun. Si ces enfants sont pauvres, ils se trouvent si souvent ou si longtemps écartés des établissements publics d'instruction qu'ils sont condamnés à ne faire que des études tronquées ou à mettre

tant d'années à les terminer qu'ils ne peuvent plus espérer aborder certaines carrières en temps utile. Ces catégories d'enfants malchanceux sont nombruses. Il y a ceux qui, après une maladie aiguë (fièvre éruptive, fièvre typhoïde, pneumonie, etc.), au lieu de se rétablir dans les délais habituels, sont condamnés à une très longue convalescence, sans cependant être incapables, pendant cette lente restauration de leurs forces, de reprendre certains études. Il est même désirable, pour le rétablissement de leur activité intellectuelle, qu'ils ne restent pas trop de mois dans une inertie cérébrale absolue, après laquelle la remise en marche de leurs opérations intellectuelles serait d'autant plus difficile qu'on l'aurait trop retardée. Dans beaucoup de convalescences il y a une époque où le travail cérébral doit être repris avec beaucoup de ménagements ; mais ces convalescents qui recommencent à travailler ne peuvent être replacés parmi les autres écoliers, sous peine de ne plus pouvoir les suivre. Dans une situation aussi gênante se trouvent les enfants victimes d'un accident (fracture compliquée) ou atteints d'une lésion osseuse ou articulaire à évolution très lente. Une fois placés dans l'appareil qui doit assurer à la longue leur guérison, ils ne peuvent suivre les travaux d'une classe normale, mais ils sont cérébralement en état de travailler et il est même à craindre que leur cerveau, inoccupé au point de vue des études pendant des mois, ne perde l'habitude du travail.

D'autres enfants, éprouvés par certaines névroses (chorée, neurasthénie, hystérie), doivent être soumis à un régime qui, après avoir été le repos cérébral absolu pendant un temps plus ou moins long, comporte ensuite une période de rééducation et d'entraînement progressif.

Je citerai encore ceux qui, subissant une croissance trop rapide, avec troubles fonctionnels de certains appareils (dyspepsie, entérite, albuminurie intermittente) doivent être maintenus dans un repos relatif ou plutôt n'être soumis qu'à une discipline de travail moins intensif pendant quelques mois.

Enfin il y a ces enfants qu'une débilité constitutionnelle congénitale voue à un minimum de travail pendant toute la durée de leur scolarité, qui jamais ne pourront fournir la même somme de travail que des enfants bien constitués, mais qui ont droit pourtant à faire des études ; d'autant plus que certains de ces enfants, ainsi tarés congénitalement, peuvent, au bout de quelques années, si on les a placés dans des conditions favorables d'hygiène physique, obtenir une santé plus forte et regagner le temps perdu. Ce ne sont pas des arriérés définitifs. Ce sont des arriérés temporaires.

Cette énumération montre qu'il y a, en dehors des anormaux pour lesquels il faut une pédagogie spéciale et une sorte d'orthopédie intellectuelle, nécessitant des établissements scolaires absolument distincts, plusieurs catégories d'enfants normaux, les uns *convalescents* ou *physiquement débiles*, les autres *temporairement arriérés*, qui ne peuvent trouver place dans les classes communes et dans les établissements publics des villes très peuplées.

Quel est le pourcentage de ces enfants par rapport au nombre total des écoliers ? Jusqu'ici nous ne pouvons, même approximativement, le fixer. Les documents officiels font défaut : une telle statistique ne pourra être faite que dans quelques années, lorsqu'on aura dépouillé un très grand nombre de ces fiches médicales individuelles ou carnets scolaires de santé, dont nous réclamons depuis longtemps la création dans tous les établisse-

ments scolaires. Mais il est évident que le nombre est grand de ces écoliers qui sont arriérés temporairement par une des infirmités ou maladies ou par un des épisodes même physiologiques de croissance que j'ai rappelés.

Ces écoliers, faute d'une organisation adaptée à leur cas spécial, sont voués trop souvent à devenir des arriérés définitifs et des découragés à perpétuité. Ou bien les professeurs ne s'occupent pas d'eux, ou bien, devant leur consacrer trop de temps, ils feraient tort à la majorité de leurs condisciples tout-à-fait sains. Leur présence dans les classes communes a donc un double inconvénient.

II.

Comment peut être résolu ce problème de pédagogie publique ?

Il peut l'être par la création de deux sortes d'organismes scolaires : les *collèges climatiques* et les *classes spéciales pour arriérés temporaires* dans les autres établissements.

Il est à regretter que les établissements scolaires ne soient pas installés en général hors des villes, en pleine campagne. Mais il n'est pas possible de renoncer dès maintenant à tous les collèges construits dans les villes. Tout au plus peut on demander qu'on n'en construise plus de nouveaux dans ces conditions d'aération insuffisante.

On ne peut d'ailleurs éloigner de leurs familles la plus grande quantité des écoliers et la nécessité de conserver des élèves externes sera toujours une objection fondamentale à la création des collèges loin des villes ; mais, si pour les enfants sains on peut continuer les usages actuels, il n'en peut plus être ainsi pour les enfants débiles, prédisposés par hérédité à l'infection tuberculeuse ou convalescents de maladies affaiblissantes.

Pour ceux-là conviennent des collèges installés dans des conditions particulières de climat ou d'altitude. Les collèges de ce genre, qu'on peut appeler *collèges de santé* ou *collèges climatiques*, doivent être tantôt dans les plaines, tantôt sur les montagnes, tantôt au bord de la mer, les uns dans le Midi, les autres dans les régions tempérées, afin de pouvoir répondre aux indications multiples de la prophylaxie et de la thérapeutique. Déjà certains de nos collèges de France se trouvent dans des villes particulièrement salubres grâce au voisinage des grandes forêts, et ceux de Compiègne, de Fontainebleau, de St. Germain-en-Laye en France présentent pour les enfants délicats de santé des avantages incontestables. Aux portes même de Paris le lycée Lakanal à Bourg-la-Reine et le lycée Michelet à Vanves, entourés de très beaux parcs, sont de beaucoup préférables à ceux de la ville.

Mais il faut plus : il faut des *collèges marins*, des *collèges de montagne*, afin d'y recevoir les enfants qui se trouvent dans les conditions pathologiques dont j'ai parlé plus haut. En attendant que l'Université de France, lente à évoluer, ait réussi à créer ces types nouveaux d'établissements climatiques, l'initiative privée a donné l'exemple. Notre collègue, le Dr. Festal, a réalisé l'organisation d'un collège dans ce genre à Arcachon. Il existe un établissement également dans l'air marin près de Royan ; un autre, les Corbières, auprès de St. Malo-St. Servan. Depuis plusieurs années l'École des Roches en Normandie, fondée par l'éminent Demolins, le Collège de l'Île de France à Liancourt, dans l'Oise, étaient des modèles que l'initiative privée fournissait à l'État, mais ces établissements, parfaitement organisés en

pleine campagne, sont d'un prix qui n'est guère abordable pour les familles de fortune modeste. Il y a donc un effort à faire de la part de nos directeurs de l'enseignement public. Nos voisins d'Outre-Manche et d'Outre-Rhin sont acquis à ces idées et nous ont devancés dans cet ordre de créations scolaires.

Mais, si le principe des collèges de santé ou collèges climatiques pour enfants débiles n'est plus contesté, la question est plus complexe et moins facile à résoudre pour assurer la continuation des études ou leur reprise précoce aux écoliers et collégiens fatigués passagèrement, convalescents ou temporairement débiles, qu'on ne peut ni remettre dans les classes ordinaires, ni envoyer dans un collège climatique où les études suivent le cours normal. Pour cette catégorie, pourtant bien digne d'intérêt, il n'y a encore que les leçons particulières, trop onéreuses pour beaucoup de familles, et qui ne donnent pas d'émulation aux enfants. Il me paraît donc nécessaire d'organiser dans tous les établissements scolaires de quelque importance *certaines classes*, qui fonctionneraient parallèlement aux autres, avec des programmes allégés, des séances de travail moins longues ou moins fréquentes, des professeurs choisis parmi ceux que leur caractère rendrait plus aptes à comprendre la situation spéciale de ces enfants qui ont besoin de ménagements particuliers.

J'ai depuis longtemps parlé de ce projet à des directeurs d'établissements scolaires, à de hauts fonctionnaires de l'enseignement primaire et secondaire. Diverses objections avaient été faites à ma proposition.

On m'avait dit qu'il serait pratiquement difficile d'organiser des classes dont le personnel écolier se renouvellerait irrégulièrement, tantôt plus, tantôt moins nombreux, quelquefois même nul, suivant les hasards des maladies, et dont pourtant le personnel enseignant serait fixe ;—que ce serait une tâche malaisée et rebutante pour les maîtres d'adapter l'enseignement à ces enfants temporairement anormaux et avec des anomalies disparates ;—qu'il en résulterait des charges budgétaires nouvelles et variables, ce qui est difficile à faire accepter aux rapporteurs de nos budgets de l'instruction publique ;—enfin que peu de parents consentiraient à mettre leurs enfants dans des classes qui seraient connues comme *classes d'arriérés*.

Mais j'ai eu la satisfaction de constater, lors du deuxième Congrès Français d'Hygiène Scolaire, auquel j'avais soumis la question, que des professeurs compétents ont d'eux-mêmes réfuté la plupart de ces objections.

Il paraît possible d'utiliser dans tous les grands établissements scolaires de jeunes maîtres qui pourraient, chacun suivant sa spécialité (littérature, histoire, sciences, etc.), assumer la tâche de remettre au courant par petits groupes les élèves momentanément retardés. Ces professeurs déploieraient même sans doute une bonne volonté particulière pour faire mieux apprécier dans cette fonction délicate leurs aptitudes pédagogiques.

La question des frais à prévoir n'est pas pour arrêter les organisateurs ; car il y aurait toujours des élèves pour ces classes hors cadre, qui forment à n'en pas douter une catégorie nombreuse, puisqu'elle comprend à la fois ceux qui, actuellement, suivent sans en tirer profit les classes normales par suite de leur médiocre état de santé, et ceux que les parents conservent maintenant chez eux, découragés de les voir incapables de suivre utilement les classes.

Quant à l'adhésion des familles à la création de ces classes de convalescents et de débiles temporaires, elle ne me paraît pas douteuse; car mon expérience de praticien me fait chaque jour confidant de l'embarras où se trouvent les parents qui ont à résoudre le problème de l'éducation et de la rééducation de ceux de leurs enfants qui se trouvent dans ce cas.

Je ne crois pas que la situation des écoliers et des familles soit sensiblement différente en pareille circonstance dans les pays autres que la France. C'est ce qui m'a paru légitimer la communication de cette question délicate de pédagogie à un Congrès international.

THE MANCHESTER COUNTRY SCHOOL, FOR TOWN CHILDREN.

By HENRY L. P. HULBERT, M.A., M.B.

THIS school provides a fortnight's education in the country, with board and lodging, for selected groups of children from the Manchester elementary schools during the summer months. The idea was propounded by Rev. Nugent Perry, then vicar of St. Mark's, a densely populated slum parish, in a letter which appeared in the *Manchester Guardian* on the 30th July, 1903. A committee was formed, and the school opened for its first season in the summer of 1904. The late Mr. Herbert Philips was the first chairman, and the buildings have been erected largely through his generosity. Mr. Perry, has been the energetic secretary throughout.

The school is at Knoll's Green, in Cheshire, sixteen miles from Manchester, in the midst of well-wooded pastoral country. It is built on five acres of land acquired at a peppercorn rent through the David Lewis trustees, and is surrounded by gardens.

The buildings are of one story; with the exception of the new kitchen and bathroom, they are built of corrugated iron, lined with matchboarding. They consist of six single bedrooms for the staff (including the teachers); two dormitories with sixty-four single beds in each (N.B., each dormitory is overlooked by a window in a teacher's bedroom); two cloak-rooms, boot-room, teacher's room, matron's room, school-room for eighty, dining-room for 150, bath-room with ten showers, and good kitchen with range, hot and cold water, etc.

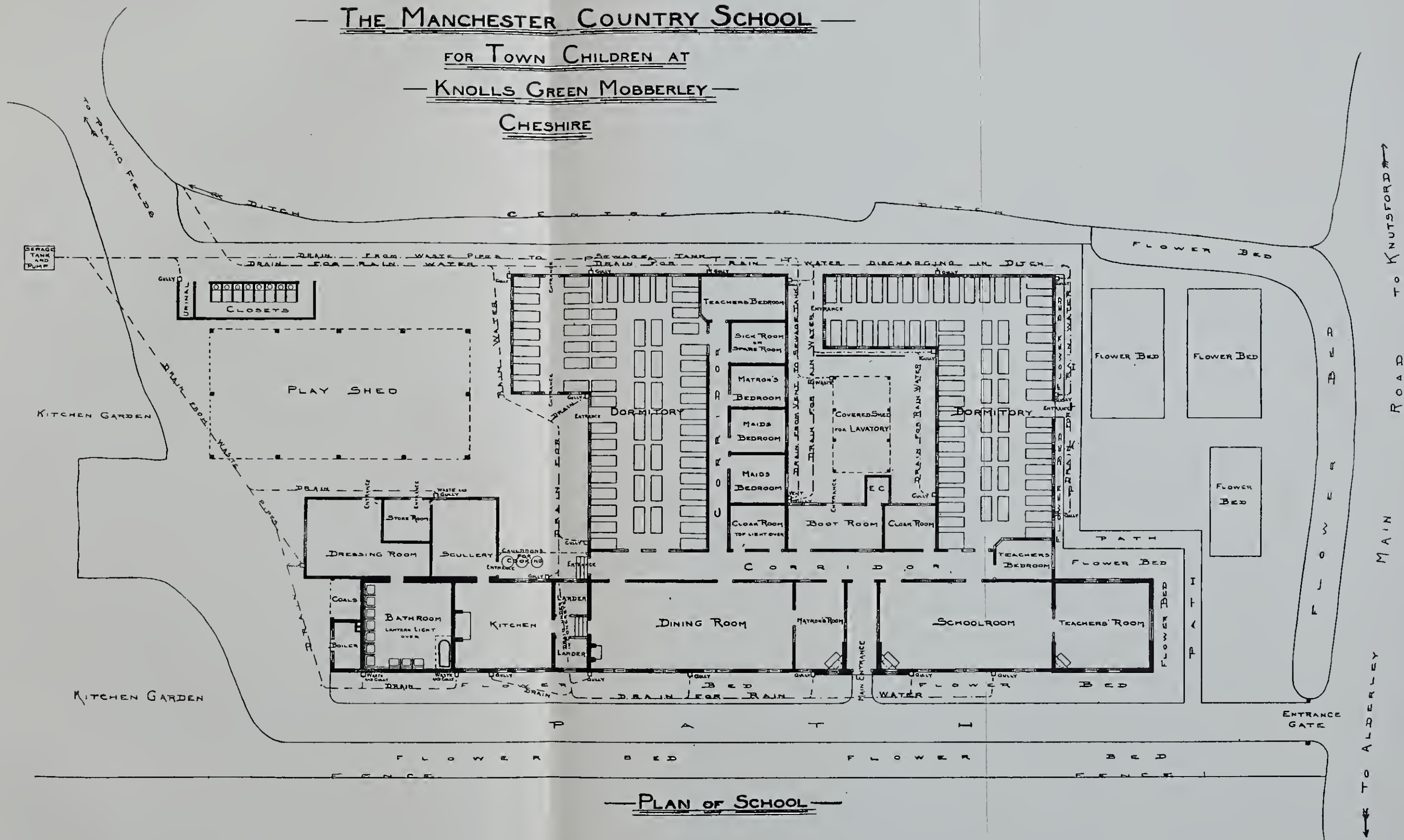
In addition to the necessary offices there is a play shed, open at the sides and covered by a corrugated iron roof. The children take their meals in this shed in fair weather, being practically in the open air.

Pail closets are used, and slop water is pumped on to the kitchen garden.

The water supply is at present from a shallow well on the premises, but water from the Stockport Waterworks is being laid on.

The total cost of the building, furniture, laying out of grounds and water supply up to the beginning of the present season (April, 1907)

FOR TOWN CHILDREN AT
— KNOLLS GREEN MOBBERLEY —
CHESHIRE





has been £3000, exclusive of the bathroom, the gift of one generous donor.

The permanent staff consists of a matron and her daughter, who acts as assistant; two female servants; one gardener, who is also teacher of nature study, and one general workman (out of doors). Three or more teachers (one for every forty children) accompany each party.

The diet is unrestricted, and almost incredible amounts of food are disposed of by some of the children. It has not been possible to obtain exact quantities. The children were weighed on their first and last days at the school, and of those recorded 404 gained 931 lbs., whilst thirty lost 76 lbs. weight. Their age varies between seven and fourteen years. Children under seven are not sent.

The total expense for last season, excluding capital account expenditure, was £556 14s. 6½d. For this sum the school was open twenty-four weeks and provided for 1175 children and 43 teachers.

The average cost per child for its 14 days' stay at the school is 11s. 7d. The charge made to each child, including railway fares, is 7s. The charge of 7s. for the fortnight at the country school exceeds only by 2s. 6d. the minimum sum considered necessary for the maintenance of any child of school age during that time. Nevertheless this charge is prohibitive for the poorest class. A few of these go to the school free through charitable aid, but the majority pay the 7s. fee.

Boys and girls visit the country school for alternate fortnights. The home of each child is visited by the attendance officer, and a clean bill of health for a fortnight, as regards infectious disease, is obtained. The children are also examined by the school medical officers in Manchester on the day before leaving. These precautions have so far prevented the occurrence of a single case of infectious disease at the school. In spite of the great trouble which the teachers take to get the children clean, 135 out of 304 girls (up to June 7, 1907) have been found to have nits in their hair and to require further cleansing.

The dining-room has this year been practically abandoned, the meals being served on tressel tables in the open-air play-shed. Besides the healthiness of this arrangement, it is found to save labour to the staff.

Both boys and girls are requisitioned in the kitchen as "potato-peelers," "bread-cutters," etc. The children wash up for themselves, make their own beds and sweep the dormitories. The daily rambles in the fields and country lanes are a characteristic feature of the country school life. The children have abundant opportunity for making discoveries for themselves in the fields and hedgerows. Mr. Dale, the school gardener and naturalist, is the presiding genius on these occasions. In the morning he prepares the way by giving systematic lessons in the classroom. Bees are kept in the garden and their hives and habits are demonstrated.

The school is open for 24 weeks, from the last week of April until the beginning of October. Last year 1175 children were sent there with 43 teachers. The mentally defective from the special schools occupy it during the Whitsuntide holiday. During the summer holiday it is handed over to the Manchester Education Committee, who pay the Country School Committee the sum of £25 for rent. The children of the Mill Street Day Industrial School make use of the buildings during this time.

The school was an experiment, started with the intention that it should be handed over to the Manchester Education Committee when its success was assured. The approval of the Board of Education was obtained at the outset by the Manchester Education Committee, which has encouraged the school in every possible way. The advice of Mr. C. H. Wyatt, director of elementary education, has been at the disposal of the country school at every turn. With these advantages it has been so far successful that the Manchester Education Committee has obtained an extension of the lease for ten years. This has justified them in paying for the recent extension of the buildings from money at their disposal other than the rates. If the school could be extended to include 500 scholars it has been calculated that it would be self-supporting.

Professor OSCAR SCHWARZ (Charlottenburg): German institutions having been set up as models to England in the interest of school hygiene, it seems right to bring under notice, too, that there are English systems, that not only *can* serve Germany as models, but indeed *have* already done so. The University College School in Hampstead, with its fine hall for Swedish gymnastics and adjoining shower-bathroom, is, in my opinion, the model of a high class institute in the clever arrangement of the rooms, so well adapted for the complete supervision of the scholars, and the splendid work carried out in the building, as well as in the wise pedagogical organisation of the whole.

Bisley Training Camp is a perfect recreation school for boys, giving the children in their tent-life the advantage of inhaling the beautiful fresh air of a healthy spot both day and night.

King Alfred's School may also be set up as a model, for we find there the individual treatment of the scholar, a thing that is of the greatest importance, not only for the life happiness of the individual himself but also for the prosperity of the nation.

It is the sincere hope and desire of the Charlottenburg School Committee that in their recreation schools, too, gradually more and more children will be able to pass the night there as well as the day, and that in their open-air schools the children will be instructed on the method of individual treatment. It would be just in the forest school at Charlottenburg that one could well introduce this, letting the children develop according to their individuality, and setting them to work on practical things, in much the same way as at Bisley Training Camp the boys have to make their own targets and to help in the cooking-tent.

Charlottenburg is now striving for this individual treatment, and has already taken the first step towards it in forming groups of the scholars according to their abilities. The Committee for the Reform and Improvement of the Board Schools has already taken its first measures for reorganisation, and in this the Committee took the system of the English board schools (in their lowest standards) as model in adding a kindergarten to their reform board school, where children, who are defective or otherwise deficient, receive instruction while at play, and through this eventually become more capable of learning by themselves.

It is a real pleasure to watch with what intelligence and ease the teacher is able to awaken the interest of the children while at their games; and just this interest is a guarantee for the development of the children's intellects.

With gratitude the Charlottenburg delegates hope to put into practice all the good they have learned in this Congress of the systems and methods that are specially English, confident that every nation brings forth great and grand ideas, and hoping that the mutual exchange of ideals for the furtherance of culture may be used to augment the happiness and peace of the world at large.

DIE FUER DIE ANFERTIGUNG DER HAUSAUFGABEN VON DEN SCHUELERN BEVORZUGTEN TAGESZEITEN.

Von Oberlehrer KARL ROLLER, Darmstadt, Germany.

IN Deutschland hat man in den letzten Jahren der Belastung der Schüler durch häusliche Arbeiten auf Versammlungen von Vertretern der Medizin und der Pädagogik ganz besondere Aufmerksamkeit gewidmet. Auch in der Literatur hat die Hausaufgabenfrage eine gebührende Würdigung gefunden, und in den letzten Monaten noch ist man sich sogar darüber in die Haare geraten. Was indessen den meisten Erörterungen unserer Frage abgeht—ein Mangel, auf den in letzter Zeit öfters hingewiesen wurde—ist die rationelle Verwendung der Umfrage und des Experimentes zur Erlangung unwiderlegbarer pädagogischer und hygienischer Wahrheiten, die im Stande sind, allmählich dem Wirrwar der Meinungen, wie er heute besteht, ein Ende zu bereiten und die Hausaufgabenfrage von rein wissenschaftlichen Gesichtspunkten zu beleuchten, soweit dies eben möglich ist. Auf eine Schwierigkeit hat man bei diesen statistisch-experimentellen Untersuchungen hingewiesen; man hat vielfach Zweifel erhoben gegen die Angaben von Schülern. Trotzdem stehe ich auf dem Standpunkte, dass die Schüler für diese Methode sehr gut zu verwenden sind; gewiss nicht alle, aber doch ein grosser Teil von ihnen. Der Lehrer muss eben nur verstehen, diese Schüler herauszufinden. In manchen Fällen wird es sich empfehlen, die Eltern dabei zu Rate zu ziehen. Mit einigem Geschick und einiger Liebe zur Sache wird es dann gewiss gelingen, richtige Resultate zu erzielen. Ausserdem haben wir die Gewähr für die Richtigkeit in den Kontrollversuchen und in der Vergleichung gewonnener Resultate mit anderen vollständig unabhängig von ihnen entstandenen.

Wenn ich mir für heute vorgenommen habe, über *die Zeit* zu sprechen in der die Schüler vorzugsweise ihre Hausaufgaben erledigen, so muss ich darauf verzichten, den Gegenstand nach allen Richtungen hin erschöpfend behandeln zu wollen, denn die Untersuchungen darüber sind noch lange nicht abgeschlossen, ja man kann ohne Uebertreibung behaupten, sie sind erst in ihrem Entstehen begriffen. Trotzdem geben uns die bis jetzt erzielten Resultate eine recht beachtenswerte Anzahl von Tatsachen, die bei der Erörterung der Hausaufgabenfrage nicht ohne Interesse sein dürften und in vieler Hinsicht als Richtschnur dienen könnten. Meine Ausführungen stütze ich in erster Linie auf das Buch von Dr. Friedrich Schmidt, Würzburg: "Experimentelle Untersuchungen über die Hausaufgaben des Schulkindes" (Leipzig, Wilhelm Engelmann, 1904). Schmidts Buch handelt über Schüler einer *Volksschule*. An zweiter Stelle zitiere ich Jul. Vinz. Patzak, "Schule und Schülerkraft" (Wien und Leipzig, A. Pichlers Wittve und Sohn, 1904). Ich habe mir die Mühe gemacht, aus dem überaus reichhaltigen Tabellenmaterial dieses Buches das für unsern Gegenstand Wichtige herauszuziehen. Das Buch handelt über Schüler eines kaiserl. königlich (österreich.) *Staatsobergymnasiums*, einer k. k. (österr.) *Staatsoberrealschule* und einer österr. öffentlichen dreiklassigen *Handelsacademie*. An dritter Stelle

endlich verwerte ich statistische Untersuchungen, die ich selbst an einer *Oberrealschule* veranstaltet habe.

Die folgenden Tabellen sollen zeigen, welche Stunden die Schüler vorzugsweise für die Anfertigung ihrer Hausarbeiten benutzen. Ich beginne mit den von Schmidt gefundenen Zeiten und schicke dabei voraus, dass an der Schule, wo die Versuche angestellt wurden, vor- und nachmittags unterrichtet wurde. Nur die Mittwoch- und Samstagnachmittage waren unterrichtsfrei. Bei dem Kontrollbeispiele Schmidts ist zu berücksichtigen, dass vielfach nachmittags Hitzferien stattfanden, d.h. dass an sonst mit Unterricht besetzten Nachmittagen der Unterricht wegen allzugrosser Hitze ausfiel.¹

TABELLE I A.

TABELLE DER FUER DIE ANFERTIGUNG DER HAUSARBEITEN VERWANDTEN ZEITEN (SCHMIDT).

I. BEISPIEL.

	Stunde des Tages.				Zahl der Fälle.
Es wird gearbeitet von	(1)	5-6	in	..	50
	(2)	7-8	„	..	28
	(3)	6-7	„	..	23
	(4)	1-2	in ungefähr	..	15
	(5)	8-9	„	„	7
	(6)	9-10	in	..	2

Die Nachmittagsstunden enden um 4 Uhr.

TABELLE I B.

TABELLE DER FUER DIE ANFERTIGUNG DER HAUSARBEITEN VERWANDTEN ZEITEN (SCHMIDT).

II. BEISPIEL (KONTROLLE ZU TAB. I.).

	Stunde des Tages.				Zahl der Fälle.
Es wird gearbeitet von	(1)	1-2	in	..	47
	(2)	7-8	„	..	31
	(3)	6-7	„	..	29
	(4)	5-6	in ungefähr	..	26
	(5)	8-9	„	„	7
	(6)	9-10	in	..	2

Die Nachmittagsstunden enden um 4 Uhr.

TABELLE II A.

TABELLE DER FUER DIE ANFERTIGUNG DER HAUSARBEITEN VERWANDTEN ZEITEN (PATZAK).²

Zahl der Schüler : 25.

Klassen : Obere Klassen.

Schule : Oestert. Obergymnasium. *Alter* : 14½–19½ Jahre.

BEGÜNSTIGTE ARBEITSZEITEN ZWISCHEN VOR- UND NACHMITTAGS-UNTERRICHT.

	Stunde des Tages.				Zahl der Fälle.
Es wird gearbeitet von	(1)	12-1	in	..	54
	(2)	1-2	„	..	44
	(3)	11-12	„	..	31
	(4)	2-3	„	..	3
					132

Dauer des Vormittagsunterrichtes von 8-11 (12) (1).

„ Nachmittagsunterrichtes von 2-4 (5).

¹ Schmidt : pag. 11 und 12.

² Zusammengestellt nach Patzak.

TABELLE II B.

TABELLE DER FUER DIE ANFERTIGUNG DER HAUSARBEITEN VERWANDTEN ZEITEN (PATZAK).¹

Zahl der Schüler : 25. *Klassen* : Obere Klassen.
Schule : Oesterr. Obergymnasium. *Alter* : 14½–19½ Jahre.

BEGUENSTIGTE ARBEITSZEITEN AM ENDE DES NACHMITTAGSUNTERRICHTES.
 (GETEILTER UNTERRICHT.)

Stunde des Tages.				Zahl der Fälle.	
Es wird gearbeitet von	(1)	5–6	in ..	..	52
	(2)	6–7	„ ..	..	51
	(3)	9–10	„ ..	..	51
	(4)	8–9	„ ..	..	47
	(5)	7–8	„ ..	..	41
	(6)	4–5	„ ..	..	36
	(7)	10–11	„ ..	..	21
	(8)	11–12	„ ..	..	3
	(9)	12–1	nachts ..	..	2
					304

Dauer des Nachmittagsunterrichtes von 2–4 (5) Uhr.

TABELLE I C.

TABELLE DER FUER DIE ANFERTIGUNG DER HAUSARBEITEN VERWANDTEN ZEITEN (PATZAK).²

Zahl der Schüler : 25. *Klassen* : Obere Klassen.
Schule : Oesterr. Obergymnasium. *Alter* : 14½–19½ Jahre.

BEGUENSTIGTE ARBEITSZEITEN, WENN KEIN NACHMITTAGSUNTERRICHT STATTFAND.

(UNGETEILTER UNTERRICHT.)

Stunde des Tages.				Zahl der Fälle.	
Es wird gearbeitet von	(1)	3–4	in ..	..	52
	(2)	2–3	„ ..	..	43
	(3)	4–5	„ ..	..	42
	(4)	8–9	„ ..	..	29
	(5)	9–10	„ ..	..	30
	(6)	5–6	„ ..	..	25
	(7)	1–2	„ ..	..	24
	(8)	7–8	„ ..	..	19
	(9)	6–7	„ ..	..	18
	(10)	11–12 (Vormittag)	in ..	..	15
	(11)	12–1	in ..	..	11
	(12)	10–11 (Abend)	in ..	..	7
					315

Dauer des Vormittagsunterrichtes von 8–12 (11) (1).

¹ Zusammengestellt nach Patzak.

² Zusammengestellt nach Patzaks Tabellen.

TABELLE III A.

TABELLE DER FUER DIE ANFERTIGUNG DER HAUSARBEITEN BEVORZUGTEN ZEITEN (ROLLER).

Zahl der Schüler : 28.
Schule : Oberrealschule.*Klasse* : Untersecunda.
Alter : 14–16.

BEGUENSTIGTE ARBEITSZEITEN BEI GETEILTEM UNTERRICHT.

I. BEISPIEL.

Stunde des Tages.				Zahl der Fälle.	
Es wird gearbeitet von	(1)	8–9	in	8	
	(2)	6–7	„	8	
	(3)	7–8	„	5	
	(4)	2–3	„	4	
	(5)	1–2	„	1	
	(6)	5–6	„	1	
	(7)	9–10	„		
	(8)	10–11	„	0	
				—	
				28	

II. BEISPIEL (KONTROLLE).

Stunde der Tages.				Zahl der Fälle.	
Es wird gearbeitet von	(1)	8–9	in	9	
	(2)	6–7	„	6	
	(3)	7–8	„	6	
	(4)	2–3	„	2	
	(5)	1–2	„	2	
	(6)	5–6	„	2	
	(7)	9–10	„	1	
	(8)	10–11	„	0	
				—	
				28	

Der Vormittagsunterricht dauerte von 8–12.45 Uhr.
„ Nachmittagsunterricht „ „ 3–5.30 „

TABELLE III B.

TABELLE DER FUER DIE ANFERTIGUNG DER HAUSARBEITEN BEVORZUGTEN ZEITEN (ROLLER).

Zahl der Schüler : 28–30.
Schule : Oberrealschule.*Klasse* : Untersecunda.
Alter : 14–16 Jahre.

BEGUENSTIGTE ARBEITSZEITEN BEI UNGETEILTEM UNTERRICHT.

I. BEISPIEL.

Stunde des Tages.				Zahl der Fälle.	
Es wird gearbeitet von	(1)	2–3	in	53	
	(2)	3–4	„	28	
	(3)	4–5	„	25	
	(4)	8–9	„	17	
	(5)	7–8	„	11	
	(6)	1–2	„	7	
	(7)	6–7	„	6	
	(8)	5–6	„	4	
	(9)	9–10	„	3	
	(10)	10–11	„	1	
				—	
				155	

II. BEISPIEL (KONTROLLE).

	Stunde des Tages.			Zahl der Fälle.	
Es wird gearbeitet von	(1)	2-3	in	..	58
	(2)	3-4	„	..	33
	(3)	4-5	„	..	24
	(4)	8-9	„	..	17
	(5)	1-2	„	..	10
	(6)	9-10	„	..	9
	(7)	5-6	„	..	5
	(8)	6-7	„	..	4
	(9)	7-8	„	..	4
	(10)	10-11	„	..	0
					164

Dauer des Unterrichtes von 8-12.45 Vormittags ; Nachmittags : frei.

Als Hauptergebnis der Tabellen I A-III B kann folgendes festgestellt werden :

In den meisten bevorzugten Fällen ging den Hausarbeiten eine Nahrungsaufnahme (ein Mittagessen, ein Nachmittagsimbiss u.s.w.) einige Zeit voraus (vergl. Schmidt, S. 12), die, wenn sie nicht unmittelbar vor dem Einsetzen der Arbeit erfolgte, eventuell diese günstig beeinflussen mochte (vergl. Schmidt, S. 11, und die Tabellen I A-III B).

Die meisten Schüler sind daran gewöhnt, erst ihrer Schulpflicht und dann dem Spiel oder anderen Tätigkeiten obzuliegen (vergl. Schmidt, p. 12). Deshalb wählen sie als Hausarbeit vorzugsweise denjenigen Zeitpunkt, der sich sofort dem Unterrichte bzw. der auf den Unterricht folgenden Mahlzeit anschliesst.

Es muss als eine Uebertreibung betrachtet werden, wenn behauptet wird, dass eine grosse Anzahl Schüler ganze Nächte hindurch über ihren Hausaufgaben zubringen.

Wir haben als späteste Arbeitsstunden :

Nach Schmidt die Zeiten von 9-10 Abends (jedesmal 2 Fälle).

Nach Patzak bei Nachmittagsunterricht von 10-11 Abends (21 Fälle unter 304 = ungefähr 6.9%).

Nach Patzak bei Nachmittagsunterricht von 11-12 Abends (3 Fälle unter 304 = ungefähr 1%).

Nach Patzak bei *ungeteiltem* Unterricht von 10-11 Abends (7 Fälle unter 315 = ungefähr 2.2%).

Nach Patzak bei *ungeteiltem* Unterricht von 11-12 Abends (0 Fälle unter 352 = 0%).

Nach Roller bei Nachmittagsunterricht von 9-10 Abends (1 Fall jedesmal unter 28 = ungefähr 4%).

Nach Roller bei Nachmittagsunterricht von 10-11 Abends (0 Fälle jedesmal unter 28 = 0%).

Nach Roller bei *ungeteiltem* Unterricht von 9-10 Abends (im ganzen 12 Fälle unter 319 = ungefähr 4%).

Nach Roller bei *ungeteiltem* Unterricht von 10-11 Abends (1 Fall unter im ganzen 319 = 0.3%).

Da bei *ungeteiltem* Unterrichte verhältnismässig so wenige Schüler am Abend arbeiten, muss diese Art des Unterrichtes als die *empfehlenswerteste* betrachtet werden. Nur bei *geteiltem Unterrichte*, wenn also Vor- und Nachmittag mit Unterrichtsstunden belastet sind, häuft sich die Zahl der Abendarbeiter.

ABENDARBEITER NACH PATZAK :

Bei *ungeteiltem* Unterricht in den Stunden zwischen 7–12 Uhr Abends
85 unter 315 Fällen = ungefähr 27%.
Bei *geteiltem* Unterricht in den Stunden zwischen 7–12 Uhr Abends 169
unter 304 Fällen = 54%.

ABENDARBEITER NACH ROLLER :

Bei *ungeteiltem* Unterricht in den Stunden zwischen 7–12 Uhr Abends
62 unter 319 Fällen = 19%.
Bei *geteiltem* Unterricht in den Stunden zwischen 7–12 Uhr Abends 30
unter 56 Fällen = 54%.

Vergleiche die Tabellen.

Wir haben bei der Zeitfrage nun noch einen andern Punkt zu berühren. Es wird mit Recht für unhygienisch gehalten, wenn Schüler *Sonntags* oder *zwischen Vor- und Nachmittagsunterricht* oder *vor dem Schulbeginne Morgens* arbeiten. Ueber diese Verhältnisse sollen uns die folgenden Tabellen (IV.–VI.) Aufklärung geben :

TABELLE IV.

SONNTAGSARBEITER.

		Zahl aller Schüler.		Zahl der Sonntagsarbeiter.	
Patzak	Handelsacademie	..	25	darunter ..	.. 23
	Staatsoberrealschule	..	32	„ ..	.. 29
	Staatsobergymnasium	..	25	„ ..	.. 24
Roller	Untersecunda Oberrealschule	..	30	„ ..	.. 6
	Untertertia	..	33	„ ..	.. 25
	Quinta .. ..	..	43	„ ..	.. 13
			188		120 = 64%

TABELLE V.

ARBEITER ZWISCHEN VOR- UND NACHMITTAGSUNTERRICHT.

		Zahl aller Schüler.		Arbeiter zwischen Vor- und Nachmittagsunterricht.	
Patzak	Handelsacademie	..	27	darunter ..	22 Schüler.
	„	..	25	„ ..	23 „
	Staatsoberrealschule	..	32	„ ..	26 „
	Staatsobergymnasium	..	25	„ ..	24 „
Roller	Unterprima Oberrealschule	..	23	„ ..	8 „
	Untersecunda	„	30	„ ..	17 „
	„	„	26	„ ..	14 „
	Obertertia	„	48	„ ..	27 „
	Untertertia	„	33	„ ..	27 „
			269		188
					= ungefähr 70%

TABELLE VI.

ARBEITER VOR DEM VORMITTAGSUNTERRICHT.

		Zahl aller Schüler.		Arbeiter vor dem Vormittagsunterricht.	
			darunter		Schüler.
Patzak	Handelsacademie ..	..	27	..	18
	„ ..	..	25	..	25
	Staatsoberrealschule ..	..	32	..	28
	Staatsobergymnasium ..	..	25	..	22
	Unterprima Oberrealschule	..	23	..	14
Roller	Untersecunda „	..	30	..	6
	Untersecunda—				
	Montag ..	..	28	..	6
	Montag ..	..	28	..	4
	Dienstag ..	..	25	..	4
	Dienstag ..	..	29	..	3
	Mittwoch ..	..	25	..	1
	Mittwoch ..	..	28	..	2
	Donnerstag ..	..	26	..	1
	Donnerstag ..	..	30	..	2
	Freitag ..	..	28	..	4
	Freitag ..	..	28	..	6
	Samstag ..	..	28	..	6
	Samstag ..	..	30	..	3
	Obertertia ..	..	48	..	13
	Untertertia ..	..	33	..	16
	Quinta ..	..	43	..	23
			619		207

Wie aus Tabelle IV. ersichtlich ist, haben wir unter 788 Schülern 120, also ungefähr 64%, gefunden, die Sonntags für die Schule arbeiten. Sie wären leicht zu beseitigen, wenn man, wie es von vielen Hygienikern verlangt wird, von Samstag auf Montag keine Aufgaben gäbe. Diese Einrichtung wäre gewiss discutabel, sie stösst aber in vielen Fällen auf grosse sich aus dem Stundenplane ergebende Schwierigkeiten, da beispielsweise in diesem Falle ein Lehrer, dem für sein Fach nur 2 wöchentliche Stunden zur Verfügung, nur für eine Stunde wöchentlich aufgeben könnte, wenn eine der beiden Stunden zufälligerweise auf einen Montag fiel. Weniger hätte es zu sagen, wenn ein Fach mit mehreren Wochenstunden bedacht ist. Sehr leicht wäre die Sonntagsarbeit bei dem sogenannten Klassenlehrersystem abzuschaffen, wo es der Lehrer leicht in der Hand hat, den Montagsunterricht so zu gestalten, dass keine häusliche Inanspruchnahme für ihn notwendig ist. Auf alle Fälle empfiehlt es sich angesichts des ziemlich hohen Prozentsatzes der Sonntagsarbeiter, einerseits die Anforderungen für den Montag etwas herunterzuschrauben, andererseits aber auch die Kinderstrenge anzuhalten, eventuell mit Hilfe der Eltern, ihren Schulpflichten schon am Samstag nachzukommen.

Wir gehen über zu Tabelle V, also zu denjenigen Schülern, die zwischen Vor- und Nachmittag arbeiten. Wir fanden unter 269 Schülern nicht weniger als 188, also ungefähr 70%. Diese Hausarbeit wird in den meisten Fällen da eintreten, wo die auf den Nachmittag fallenden Fächer mit Hausarbeit belastet sind. Bei geteiltem Unterricht müssten demnach auf den Nachmittag lauter solche Fächer gelegt werden, wo die Hausaufgabe entbehrlich ist. Auf alle Fälle liesse sich der Arbeit zwischen dem Vormittags- und Nachmittagsunterricht durch Durchführung des *ungeheilten Unterrichtes* ein Ende bereiten.

An dritter Stelle kaemen nun diejenigen Schüler, die vor dem Vormittagsunterricht arbeiten. Nach Tabelle VI waren es unter 619 Fällen 207, also ungefähr 33%, wo unmittelbar vor dem Vormittagsunterricht gearbeitet wurde. Es wird wohl unmöglich sein, hier *tabula rasa* zu machen, man müsste denn vollends mit dem Hausaufgabeninstitut brechen, was pädagogisch unzulässig ist. Immerhin kann hier durch den Rat des Lehrers, und die Mitwirkung des Elternhauses vielleicht und durch entsprechende Formulierung der Hausaufgabe manche Besserung geschaffen werden.

OPEN-AIR SCHOOLS.*

By FREDERICK ROSE, Ph.D., M.A.,
Assistant Educational Adviser L.C.C.

THE first experiment for the treatment of sick or debilitated school children was carried out at Charlottenburg, in 1904, under the direction of Drs. Neufert and Bendix. Debilitated children were brought out into the open air and taught and cured or improved at the same time, a combination of educational work with hygienic treatment which has resulted in the formation of open air-schools. From the hygienic standpoint the children must be in the open air, fed regularly and properly, given plenty of playtime and rest, and treated with fresh air, sunshine and baths. From the educational standpoint the hours of formal instruction must be reduced by about one-half. Not more than twenty children should be under one teacher, and the children should be treated with the utmost consideration and attention.

The realisation of the first experiment at Charlottenburg was greatly assisted by the fact that for the large numbers of backward children who are also debilitated found during medical inspection of schools, the only possible method of treatment is by way of combined open-air instruction and bodily treatment on the lines laid down at Charlottenburg.

About 100 children were chosen for the first experiment. They were suffering principally from anæmia, but many cases of the incipient stages of pulmonary, heart and serofulous diseases were included. Diseases of an infectious nature were excluded.

The buildings, though primitive, were quite sufficient for the purpose. They consisted mostly of sheds, open on one or two or on all sides. One or two closed wooden classrooms were provided as a protection against very inclement weather. The position was a very favourable one—sloping ground, gravel subsoil, plenty of shade from the pine trees with free circulation of air.

Each day the children came about eight, when they received a bowl of soup and bread and butter. Instruction with intervals was then given

* These remarks were illustrated by a large number of lantern slides illustrating schools at Charlottenburg, Mülhausen, München-Gladbach, and in London.

till ten o'clock, when they again received milk and bread and butter. The children were then occupied with gymnastics, manual work or reading. After dinner, at 12.30 p.m., they rested or slept for two hours in deck chairs. After three, some classes received instruction, and at four, milk, bread and jam was given. Instruction and plenty of play till seven, when, before going home, the children had soup, bread and butter. The daily food expenditure averaged 6d. per head. The school doctor selected children for entrance to the school. He directed his attention at regular intervals to their condition, took measurements, chiefly with regard to colour, muscular and flesh development.

The success of the experiment was evident from the first. After a few weeks, appetite, attention, general temperament, and appearance improved. At the conclusion of the experiment it was found that 23 per cent. cases had been cured and 45 greatly improved. The increase in weight was most remarkable—on an average about $\frac{1}{2}$ lb. per week per child. Some children showed increases of from 10 lbs. to 16 lbs. It was also observed that the bodies had been hardened to a very considerable extent by the continual stay in the open air. No children suffered from cold or similar indispositions. The first experiment was carried out for three months; the second for six months; the third and fourth for eight months, with 250 children, from April right up to Christmas, when the ground was under snow. The percentage for cures and improvements in the latter experiments were much higher. It must be admitted that after returning to school about 10 per cent. of the children relapsed into their previous condition. That was, however, the fault of their home surroundings, not of the open-air school treatment.

From an educational point of view the results were satisfactory. The children were punctual, clean, orderly and good-tempered. They showed considerable increase in attention to work and in mental alertness. On returning to school nine-tenths were able to resume the ordinary school work. If so much can be attained by open-air treatment of debilitated children, immense possibilities are opened up for the similar treatment of those who are normal.

Instruction was given in the open air; if it rained, under sheds open on two or more sides. During very cold, unpleasant weather, in the closed wooden schoolrooms provided for the purpose. But even when the snow was on the ground much instruction in the open was carried on. The formal instruction was limited to about two or two hours and a half, and distributed over the morning and afternoon. The lessons lasted about half an hour, and there were ample intervals between each lesson. Formal instruction was limited principally to writing, arithmetic and similar work, requiring tables and writing apparatus. Almost all instruction in geography and history was given in the open air in an informal and interesting manner. A large amount of arithmetic was also taught in the open air with the help of actual measurements. A great deal of geography was taught with the help of modelling in sand to scale, and the study of the geographical features of the surrounding country.

Shortly afterwards a second experiment was carried out at Mülhausen (Alsace), in a park acquired by the municipality, for a sum of £10,000. One hundred anæmic children were selected and the experiment was carried on on similar lines to Charlottenburg. But the length of the school period was shorter, so that the results, though favourable, were

not quite up to the Charlottenburg standard. Further experiments on similar lines are being carried on at München-Gladbach and Elberfeld. The results, as elsewhere, have been favourable. The town of Berlin has voted £15,000 for similar purposes. In a short time a large number of towns in Germany will have adopted this new development. Up to the present time the Charlottenburg experiment stands easily first in point of size, equipment, and general conduct of the school from the educational and hygienic standpoint.

These experiments have attracted attention in England; and the first English open-air school, with 100 children, was recently established at Bostall Woods by the London County Council.¹

The selection of children for open-air school treatment must be made by school medical officers, and should embrace children who are considered to be backward owing to incipient disease or general debility. Before entrance to the school their teeth should be put in order so as to enable them to derive the utmost benefit from their food. The children should be provided with suitable and warm clothing. It is necessary to arrange the educational scheme so that the children may not fall behind in their ordinary school work. Some difficulty will be experienced at the beginning in welding together children from different schools into suitable material for instructional purposes.

The qualifications of the teachers must be of a high order, and should include ability for nature study and general scientific knowledge. Discipline should be enforced by precept, example and considerate treatment. The general principles to be observed in the establishment of open-air schools are the following :—

1. Debilitated children, and those suffering from mild chronic ailments which render them unfit for the strain of ordinary school work, must be placed in schools better adapted to their physical and mental capacities. The most suitable type of school for this purpose is an open-air one situated in a wood. The time devoted to formal instruction should be reduced to about one-half.

2. The hygienic aim of such a school must be to strengthen and cure the children by simple hygienic measures. Fresh air and sunshine, plentiful and suitable food, baths, plenty of movement and periods of absolute rest.

3. The open-air school is not only to be carried on during the spring and summer months. It is to be continued during the autumn and as far into the winter as possible, especially in countries with mild winters. It is not to be discontinued during vacations, but must be carried on with or without the morning's instruction, preferably the former.

4. As a general rule children are not to sleep in the open-air school, but to go thither in the morning and return home in the evening.

5. Children suffering from acute or infectious diseases are not to be admitted into open-air schools, but cared for elsewhere.

6. The amount of formal instruction to be given is to be ascertained upon the basis of the following cardinal principles :—That children attend an open-air school for physical recuperation and cure, combined with the minimum amount of school work necessary to prevent them falling behind in the more essential subjects.

¹ A report on this school has just been published and can be obtained from King & Son, Victoria Street, Westminster, price 1s.

The greatest attention should be concentrated upon this educational aspect of the school, otherwise such schools will never be introduced to any great extent. London alone probably contains about 30,000 children who are in need of this school treatment. These cannot be withdrawn from the ordinary schools for any length of time unless they are again returned to the schools quite able to take up the instruction in common with the boys who remain in the schools. This is a *sine qua non* without which no system of open-air schools could ever be efficiently conducted.

In addition to the purely educational subjects the children should be taught to look upon themselves as a large family; should be trained to the exercise of the virtues necessary for ordered life in communities, and should be taught to observe, but not to destroy, animal and insect life. The necessity of mutual assistance and kindness of temper would soon become self-evident to them. They should, too, take part in the co-operative life of the open-air school community. For example, they should help in making necessary arrangements, in serving food, and in attending to whatever may be found necessary for their own wants and the wants of the little community. The keynote of the instruction should be constant change from work to play, reading, singing and rest, together with perpetual stimulation of interest. As already mentioned, there should be no punishment, no exclusion from play, no unkind or hasty remarks, little blame and plenty of praise. It was necessary to mention this, in view of the sick and debilitated condition of children attending open-air recovery schools. About three months after the return of the children to their ordinary schools they should be again very carefully examined, not only with regard to their physical condition, but also with regard to the extent of their educational progress.

Such schools would not prove expensive. The principal extra item would be the feeding of the children, and for that Parliament has now given powers. On the outskirts of large towns, and in small towns, it would be much better to build such simple wooden open-air schools even for normal children. The saving effected in building expenditure could be devoted to the feeding of the children and the reduction of classes to twenty pupils. Such open-air recovery schools were urgently needed all over England, as probably some 250,000 children stood in need of them. Rightly considered, such schools, being of a preventive nature, would eventually result in the avoidance of much unnecessary suffering and expense.

Dr. NEUFERT (Charlottenburg), the founder of the first open-air school in Germany, explained the manner in which the children were selected for the open-air school at Charlottenburg. He remarked that co-education had been very successful in the school. In agreement with Dr. Rose, he laid great stress upon the educational and instructional aspect of the Charlottenburg open-air school. During the three years of its existence all the children who entered the open-air school in the spring and returned to the ordinary schools in the autumn or winter were able to keep pace with the other children who had not left the schools. Many were even far in advance of the children in the ordinary schools. This had been attained in spite of the fact that the time given to formal instruction in the open-air school was only half as much as that in the ordinary school. This astonishing result gave food for reflection. Not only with respect to the children who had attended the open-air school but also to the children who had remained in the ordinary schools. If sickly and debilitated children could, with half-time formal instruction, fresh air, food, rest and movement, be brought as far, and further,

than children in the ordinary schools with full-time formal instruction, what could not be done with normal children in the open-air under similar conditions?

The open-air school system offered the best opportunity for ascertaining the minimum amount of daily formal instruction in the school for the attainment of a certain educational standard. This question was intimately connected with another question discussed at the Congress, namely, that of overwork. The speaker drew the attention of the Committee of the International Congress to this most important point, and hoped that the Committee would see its way to place this subject in the forefront of discussion at the next Congress.

RAILWAY TRAVELLING AND SCHOOL CHILDREN.

By J. L. PATON, M.A., *Manchester Grammar School.*

THE development of facilities for intercourse brings with it new problems, and one of the most difficult is the pupil who travels to and fro from school daily on the railway train. With the growth of secondary education the number of such railway-train pupils is much larger than it was, and it is likely to be even larger in the future. There are said to be over 3000 such pupils in Westphalia; what the number is in England there are no figures to show, and, what is more serious, there has been no attempt made as yet to ascertain what effect this daily railway travelling has upon the development, physical and intellectual, of the growing boy and girl. I hope I am wrong; but for many years I have been inquiring from all sorts of medical authorities, including medical officers of schools and railways, as to whether anything has been written on this subject, and I have been unable to discover anything except a popularly written article on the general subject—"The Influence of Travelling on Health," by Dr. J. Russell Reynolds, in Malcolm Morris' "Book of Health" (Cassell & Co., 1884).

Perhaps I had better submit first the statistics of Manchester Grammar School, because about them I can answer any questions that arise. I have taken as the period of observation the whole school year, from the middle of September, 1906, to the last day of July, 1907. I took the whole school year, so as to exclude the element of seasonal variations, and I give this year only because it has been practically free from epidemics. I have left out of account—(1) those boys who left or entered the school in the course of the year; (2) those who were absent for a whole term; (3) those boys who varied railway travelling with trams or cycle, and only used trains occasionally. Absences have been accounted by half-days, morning and afternoon, so that if a boy misses a whole week he counts ten absences, because there are ten half-days.

There are 767 boys who have been in attendance at the school through the school year. Of these 452—*i.e.*, practically 59 per cent.—are boys holding season tickets on the railway and travelling to and fro regularly by train. The remaining 315 came by train or cycle or foot. The railway boys travel daily distances varying from five to over seventy, and,

in some cases, over eighty miles. They come from all points of the compass, and from four different counties. The statistics as to attendance are :—

	No.	No. of Absences.	Average per Boy.
Train boys	452	7,133	15.78
Non-train boys	315	5,132	16.29

When one considers that a boy coming from a distance is more likely to be detained for a slight ailment, these figures show that, in point of regularity of attendance, the railway-train boy is superior to the non-train boy. I am afraid the same could not be said for his punctuality.

The next inquiry was as to intellectual progress. This may be gauged by terminal reports. Reports are classified on certain definite principles, for purposes of the school record, into four classes: A, excellent; B, fair; C, not satisfactory; D, bad. A report which is on the borderline is marked AB, BC, CD, as the case may be. Such reports are counted as $\frac{1}{2}$ A, $\frac{1}{2}$ B; $\frac{1}{2}$ B, $\frac{1}{2}$ C, and so on: this accounts for the fractions. Each boy receives three reports in the course of the year :—

452 Train Boys.

	A.	B.	C.	D.
No. of reports	620 $\frac{1}{2}$	597 $\frac{1}{2}$	135	5 $\frac{1}{2}$
Percentage	45.6	44.1	9.9	.4

315 Non-train Boys.

	A.	B.	C.	D.
No. of reports	460 $\frac{1}{2}$	417	65	1 $\frac{1}{2}$
Percentage	48.7	41.1	6.9	.2

Here the train boy does not show up so well.

My next inquiry was as to physical development. The only statistics worth recording here are between the ages of twelve and fifteen; above and below that age the numbers are too small to be of any real value. The figures are :—

Age.				Average increase of weight in lbs.	Average increase of height in ins.	Average increase of chest in ins.
Train boys ..	12-13			8 $\frac{3}{4}$	2 $\frac{1}{4}$	1
	13-14			13 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{1}{2}$
	14-15			15 $\frac{1}{4}$	3	2 $\frac{1}{8}$
Non-train boys	12-13			9 $\frac{3}{4}$	2 $\frac{1}{4}$	1 $\frac{1}{2}$
	13-14			12	2 $\frac{1}{2}$	1 $\frac{3}{4}$
	14-15			12	2 $\frac{1}{2}$	1 $\frac{1}{2}$

These figures seem to indicate, what one would expect on other grounds, that the urbanised boy develops sooner than his rural *compère*. The period of rapid growth which follows puberty sets in sooner with him, but his ultimate development is not so good.

An analysis of the results at the athletic sports supports the same conclusion. There were twenty-eight events, excluding tugs-of-war and frivolous events :—

	First places.	Second.	Third.	Total.
452 train boys	17	21	21	59
315 non-train boys	11	7	7	25

An analysis of our football, lacrosse, and cricket teams shows an equally striking superiority on the part of the train boy.

I am aware that it would be misleading to draw any hard-and-fast deductions from these figures. There are too many cross-currents and variants. As it is impossible to eliminate variable factors, the only alternative seemed to be to extend the field of observation as widely as possible, and thus trust to one variant cancelling out against another. As Augustine said (in a different connection)—“*Ubi magnitudo, ibi veritas.*” I asked, accordingly, seventy-two other schools to supply me with their statistics on the same lines, hoping thereby to arrive at definite results. I am sorry to say that only six schools have seen their way to reply. These are—Brighton Grammar School; Whitgift School, Croydon; Birmingham Central Secondary School; Widnes Secondary School; Manchester Municipal Secondary; Salford Municipal Secondary. School-masters have so many forms to fill in nowadays, and so many returns to make, that my colleagues must be forgiven if they strike at this extra imposition. I am all the more grateful to the non-strikers. Combining the results from these six schools, we have :—

1. *Attendance.*

	No.	No. of absences.	Average per Boy.
Train boys	542	6,076	11.2
Non-train boys	1,154	16,904	14.65

2. *School Reports :—*

	A.	B.	C.	D.
Train boys, per cent.	34.4	36.8	22	6.7
Non-train boys „	24.8	41.5	27.6	6.1

3. *Physical Measurements :—*

Only one school sent in returns, viz. Birmingham Central Secondary School :—

	No.	Increase of Weight. in lbs.	Increase of Height. in ins.
Train boys	125	11.4	2.6
Non-train boys	138	11.8	2.7

These figures, so far as they go, confirm the result arrived at by my own statistics, viz. that in point of attendance the train boy is more regular. In regard to intellectual progress, they suggest a contrary inference, viz. that the train boy makes better progress at school. It is worth noting that, so far as objective figures go, there is no discrepancy; it is only in the subjective classification that inconsistency appears.

It may be useful to place alongside these English statistics the figures of a Hungarian school given by Dr. Adolf Jura, of Budapest. They are in form slightly different :—

	Boarding at the School.	Living with Relations.	Living with Strangers.	Train Boys.
Total Number	70	69	34	71
No. of boys who were never absent ..	1	13	5	1
No. of hours absent	6,375	1,440	1,466	2,614
Average number of hours per scholar ..	92.5	21	43	36.5

It should be noted that for some time all boarders were excluded because of infection.

With regard to intellectual progress as gauged by the annual report, the train boys are markedly inferior, showing 40 per cent. of failures :—

	Boarders.	Living with Relations.	Living with Strangers.	Train Boys.	Total.
Excellent	4	3	3	0	10
Good	14	10	2	6	32
Satisfactory	42	45	19	36	142
Unsatisfactory	11	11	10	29	61

The conditions of these boys differ materially in certain respects from those of the English boys we have been considering. School begins at 7 a.m., and that means that many train boys have to be up at 5 a.m. ; the midday interval is long, and trains are infrequent, so that many train boys are on the go from 5 a.m. to 5 p.m. When home-lessons are started after a twelve-hour day like this, it is not surprising that their intellectual progress falls short of the mark.

The general outcome of these statistics seems to be that, physically, train boys are rather superior to non-train boys. This is, I think, not due to the railway travelling, but in spite of it. The detrimental effect is more than counterbalanced by the advantages of country or suburban air, and the better feeding (I daren't say the better fare) and housing at home. It is obvious that the home of the train boy must have distinct economic advantages : either he is a farmer's son, or else he belongs to a family which is well enough off to move out to the suburbs and face the expense of a season ticket—probably for father as well as the children. On the other hand, the train boy is intellectually inferior. He has been educated perhaps at a country school, where the three upper standards are taken together ; he is therefore backward. He has not had his wits sharpened by city life ; he has not, as a rule, quite the same incentive to work. He loses time daily in his journey, and his brain loses its freshness with the wear and tear of travelling. And all this holds in spite of the fact that the train boy is frequently a picked boy, who holds a scholarship. Several masters also note that he is apt to flag towards the end of term.

So much for statistics. I propose now to review shortly the disadvantages of habitual railway travelling for school children, and then to indicate shortly what measures it seems desirable to take in view of the circumstances which make it a daily necessity for so many.

The disadvantages are :—

1. The dulness of monotony, going over the same ground day after day. Dulness is a deadly thing for all of us ; it is specially unwholesome for the young. Schoolmasters know only too well the temptations which beset the dull hour, railway officials know them too. Small boys get leathered with the window-straps ; they are slung up with other light articles on the rack or stowed under the seat with the banana-skins. Boys will do anything to fight monotony ; they unscrew advertisements, practise jujitsu, essay the furtive cigarette, or change compartments every time the train stops in order to have the pleasure of getting in

again while the train is moving. Not long since, in the skating season, a railway official came to complain to me that a boy had used his gimlet to bore a hole through the partition, and squirted with a water-pistol at an inoffensive old gentleman in the next compartment. 'These are some of the forms of rowdiness which go on in trains "and places where they sing." But these are not so serious as those other things which are done in tunnels, when young folk, whose passions are awakened before their sense of moral responsibility, whose animal spirits have been repressed all day, find themselves together in the dark. These are the things which make daily railway travelling so dangerous for girls. It must be remembered that when adolescents get together into small cliques of half a dozen or so, especially when there is no supervision, they are apt to do things which they would never do, either if they were alone, or if there were twenty of them together. Of a similar nature is the danger of railway literature. The bookstalls are not now what they were when Mr. W. H. Smith was alive. There are at least five different cheap periodicals regularly displayed and sold on those bookstalls, some of them associated in past times with names of good repute, periodicals which are now rank poison to the boyhood and girlhood of this country. Such are, in brief, the dangers of monotony. I have always felt that it is by offering escape from dullness that vices get most of their attractions, especially for the young.

2. Railway travelling levies a heavy toll on time. I have boys who spend at the least two and a half hours daily in the train, without making any allowance for unpunctuality or time spent in waiting-rooms. All this time, amounting to more than one whole day in a fortnight, is so much time taken out of rest, recreation, and education. It is idle to suppose that a school-child can do its home-lessons in the train. It is more than we can do ourselves; few adults can do anything involving intellectual strain, and, if children attempt it, the additional strain on eye and brain more than counterbalances the saving in time.

3. This brings me to the third point—the nervous strain. There is the jarring and the jolting and the din, the swaying from side to side, the abrupt arrest on the application of the brake, the vitiated air, and all the concomitant fidgetiness and discomfort, which no amount of upholstery is able to eliminate. Everyone has noticed the stupor which these things produce both in himself and others. There is, too, the feeling at breakfast that one has to catch the train—a feeling which, in the case of a neurotic child, not infrequently spoils the meal which ought to be the foundation of the day's work. These things are not of much account once in a way, but they are a very serious handicap to a weakly child when repeated day after day. Being myself a layman, I would like to quote in confirmation a letter which Dr. P. Boobyer, medical officer of health to the city of Nottingham, was good enough to send me:—

"Many neurologists, viewing the conditions of railway travelling—as these differ from those of more normal motion—from an *a priori* standpoint, have definitely expressed the opinion that they are very likely to do damage, and that they probably account for many of the signs of nervous disturbance and nerve failure and breakdown so often seen nowadays in persons of unstable and sensitive nervous temperament who travel much by rail. I know of an exceptionally intelligent boy, *et. eleven* years, of neurotic temperament, who is always sick, and usually prostrate for the rest of the day after travelling any considerable distance by rail, and I have heard of many

other persons similarly affected. Again, rhythmical spasm of eye-muscles (such as Simeon Snell, of Sheffield, has described as occurring in miners who work in abnormal attitudes) has been described as resulting from the effect of a rapidly-moving panorama on the eyes of railway travellers. The effort of reading, too, while the body and all about it is actively vibrating, as in railway travelling, is well known to damage sensitive eyesight. Osler—one of the best of our writers on general medicine, formerly of Baltimore, now of Oxford University—in discussing ‘traumatic neurosis,’ gives ‘railway brain’ and ‘railway spine’ as synonyms, and describes ‘a condition of neurasthenia (nerve weakness) or hysteria, or both,’ which ‘follows an accident’ or shock, ‘often in a railway train,’ ‘from which the patient may apparently not have suffered in his body.’ ‘Bodily shock or concussion,’ he says, ‘is not necessary. The affection may follow a profound mental impression.’

“Now, although this has special reference to railway accidents, actual or simply reputed, yet by the very admission that there is something special, which cannot be expressed in terms of physical force, about nerve-shock sustained under the conditions which obtain in rapid railway transit, the liability of such rapid vibratory movement, as such, to disturb the harmonious working of that extremely complex machine known as the nervous system, is plainly implied. And, if this be true of the adult, it is true in a higher degree of the more impressionable and less stable growing boy.”

Most teachers could quote individual cases which prove that a non-train boy, who has moved out into the country and had to go to school by train every day, has at first shown marked deterioration in work.

I shall doubtless be told that the human organism gets habituated to this jar and jostle, just as it grows perforce acclimatised to smuts, high men’s collars, pointed shoes, and other excrescences of modern civilisation. I admit that the robust natures do get so acclimatised, but it is at the loss of certain higher sensibilities which belong to the finer part of our human nature; and even in the case of the robust athletic boy the loss is distinctly perceptible, for every schoolmaster knows that if his cricket team or shooting team has to travel any distance for a match the effect of the railway travelling is distinctly unfavourable to the success of the team. This is capable of abundant verification.

4. There is the obvious danger of train boys bringing infection into the school. This danger does not attach in the same way to the tram or bus, because they are not upholstered with germ-incubators in the shape of cushions.

5. The bringing in of the country children to the town schools is all the while accentuating that centripetal tendency of our population which it is the object of legislators and garden cities to counteract.

In view of these difficulties, what practical recommendations suggest themselves?

1. As regards the school. The school hours of a town school should be compressed within as short a period as practicable, so that the pupil gets away early in the afternoon. Saturday should be a free day. The dinner interval should be as short as is practicable without ill-effects to health or work; an hour is probably long enough. No bookwork of any kind should be permitted either to masters or boys during this interval. The school should provide a good plain meal at cost price or under, and, as far as possible, this should be obligatory upon all boys who cannot go home. The train boys’ meals are a real difficulty. Breakfast is jeopardised by his instinctive tendency to stop in bed till the last possible moment; he misses the family dinner; he is too early for the father’s supper. The school should also provide a room where boys can

do their work quietly after school while waiting for trains; it should throw open its gymnasium and its workshop, so as to utilise this interval profitably and kill the loafing habit. The meetings of the orchestra, debating society, and other school societies, may redeem the opportunity for the purpose of the corporate life.

2. As regards the railways. I think doctors will agree with me that the present upholstery is hygienically wrong; the cushions are a regular seedplot for dust and germs. Again, the worst moral danger of railway travelling would disappear if all carriages were, like the dining-cars on the club-trains, open throughout at the top, with a gangway down the centre, and no separate compartments. Failing this, or, I would prefer to say, pending the general adoption of this type of carriage, there ought to be more special compartments than there are for girls. Whenever a headmistress has a sufficient number of girls to justify the application for such reserved compartment, the application should be made and granted by the company as a matter of course.

3. Most schools in their regulations claim that their pupils shall be under school discipline and wear the school badge while going to and from between school and home. Here comes the crux of the whole problem. There is nothing so anxious as to have responsibility without having control. How is one to act to police a diocese like my own (eighty miles in diameter) with 500 boys coming in from all directions by train? Who is to supervise these train routes? Masters cannot be expected to do it; they find it distasteful, and what is distasteful is badly done.

If one employs paid men for the purpose—what we should call at Cambridge “bull-dogs”—one is, I fear, only provoking to trespass. My own conclusion is that one must throw oneself frankly on the boys themselves. It is my own practice to select the two or three senior leading boys on each train route, and give them monitorial powers over the boys travelling by that route. They have to keep a sharp look-out on smoking compartments and other contraptions of juvenile mischief. It is their duty to report serious misconduct at once; in case of lesser misconduct, to warn first and then report if their warning is disregarded. But, in the main, one cannot rely much on any mere external organisation of this kind. The virtue that always needs a guardian is not worth guarding; one has to appeal frankly to the inward sense of honour in the boys themselves. “You wear the uniform of the school. The good name and honour of the school are in your hands for better or for worse. People pass silent judgment on your school according to the sort of conduct they observe in you. Bullying, smoking, rowdiness, any sort of lewdness in speech or conduct—any of these things injure the school to which you belong as well as yourself. No masters, no janitors or monitors can have you perpetually under supervision. You have your own inward monitor; show yourselves as freemen, worthy of your freedom, because the inward discipline of your conscience is more compelling than the discipline of the cane.”

W. STEWART THOMSON, M.A. (Aberdeen): Important that parents should insist on their children keeping a careful note of every penny they spend. This would check expenditure on vicious literature and the like. In many cases walking might with advantage be substituted for the train or the tram—especially in summer. Did not agree with recommendation to cut down midday interval to one hour or less. That was all right for train

pupils, but bad for local residents, who had to bolt their meals and then rush back a mile or a mile and a half to school.

Professor EDGAR (St. Andrews University) thought that Mr. Paton had done excellent service in carrying out his investigation on a subject which was becoming of increasing importance in view of the organisation of secondary education. In Scotland particularly, in view of recent and probable developments, the facts brought out by Mr. Paton, and the suggestions which he had made, would be of great practical value.

In the old times almost every parish school prepared pupils for the universities and for higher careers. But now the standard of entrance to the universities had been greatly raised, and the country schools could not, with the staff at their disposal and for other reasons, be expected to bring their pupils up to this standard. It was becoming necessary in many districts to think out plans for sending capable children by train to well-equipped central secondary schools.

He hardly expected that Mr. Paton would be able to give such encouraging statistics as to the health and regularity of attendance of train pupils. At first sight it might appear merely that life in the country, even with train travelling to school, was more healthful than life all through the year in a large manufacturing town like Manchester; but Mr. Paton made it clear, by his statistics from other schools, that the train pupils were more regular than the town pupils, even in districts where the atmosphere was not affected by the smoke of mills and works.

Further, in the circumstances, the intellectual results were by no means unsatisfactory. As regards the moral evils referred to by Mr. Paton, Professor Edgar thought that in recent years the lighting up of trains by electricity and otherwise when passing through tunnels had been a step in the right direction. Something would need to be done in regard to the pernicious and suggestive literature which was on sale at bookstalls. The danger from this kind of literature was not confined to pupils who travelled by train; but it was becoming a clamant necessity that all interested in the purity and mental health of the young should combine to demand the cleansing of the bookstalls.

The importance of a good midday meal for train children had been rightly insisted upon. Professor Edgar knew that good results on the health and attendance of pupils had been effected in the High School of Edinburgh by the institution of such a meal. It was necessary, however, to take care that the money provided by the parents for such meals was spent in that way, and not on cakes, sweetmeats, or other more unwholesome fare.

He knew of attempts to provide rooms in school in which train boys might spend the interval between school and train in preparing lessons for the next day. But boys, as a rule, preferred the excitement of the street or the railway station, and only the most earnest boys availed themselves of the opportunity offered. Such a suggestion might, however, lead to some good practical results.

He congratulated Mr. Paton on the characteristic way in which he had illumined his paper with flashes of humour and the steady light of common-sense.

TOWN CHILDREN'S HOLIDAYS IN THE COUNTRY.

By Director FR. THOMASSEN.

ALL agree that it is of great importance for the poor children in large cities to get an opportunity to spend a great part—or still better the whole—of the summer vacation in the country; such a stay in the country does not only mean an increase of their bodily health and strength, but also an enlargement of their intellectual horizon, through all that they see and hear during their stay, as well as on the trip out and home.

The parson Walther Brion, Switzerland, is considered the founder of the "vacation-camps." After he had been called from his village ministry to Zürich, he took notice of all the many pale, thin, and hollow-cheeked little ones that ran about the streets. He compared them with the farmers' children, the ruddy-cheeked and healthy-looking ones, that he had just left. Something had to be done, he thought, but what? The young city children had to be taken away from their unhealthy dwellings, and placed out in the country, up in the mountains; they should have plenty to eat, and live out in the clear, fresh mountain air. And he did as he thought. Having procured the necessary means during the summer of 1876 he sent a large number of the poor children from Zürich out in the splendid forest and mountain air among the Appenzeller Alps. This first experiment was soon followed by several others, and it was not long before these so-called "vacation-camps" formed a regular part of the Swiss school-children's bodily education. Mr. Brion's experiment soon became known in Germany, and already, in 1878, it was carried out in Frankfurt a M. Other large cities like Dresden, Berlin (1881), Halle, Leipzig, Stuttgart, Vienna, and many others soon followed. In 1882 about thirty cities could send more than 3,000 children out, and now there is hardly any of the larger cities, either in Germany or Austria, that does not every summer send its poor and sickly children out camping for about three or four weeks.

In France they are working energetically in order to introduce the "*colonies de vacances*," and these efforts are supported by a special organ—the *Bulletin de l'Œuvre des Voyages Scolaires*, with headquarters in Reims.

It may nevertheless be claimed that Denmark has the honour of having laid out the first "vacation-camp," and of having managed to secure the poor children a stay in the country during the summer holidays in, at least after our own opinion, a very satisfactory manner. It is as follows:—

The year 1853 was an ill-fated year for Copenhagen. In June the dreadful cholera raged and carried away some 5,000 out of the 130,000 inhabitants of the capital. It was said it was a "proletary-disease," as it specially devastated the poor parts of the city. Several children, who had lost their parents, were adopted by good kind people as their own, but there were still many, even very many, left that did not find

such friends. Then it was that the headmaster of one of the public schools turned to the Danish peasantry, and called upon them to help the unfortunate children in the capital, to receive them as guests during the summer holidays. The fear that the children might carry this contagious disease along with them caused that no one answered; there was, however, placed a small sum of money at the headmaster's disposal; by the help of this he got about twenty poor small girls out camping in the country. This was in 1853. The following year the appeal was renewed by a committee, and several offers were received; the next thing was the conveyance question; the committee communicated with

GENERAL VIEW OVER THE NUMBER OF CHILDREN, WHO, THROUGH THE SCHOOL BOARD IN COPENHAGEN, HAVE BEEN SENT OUT FREE OF ANY TRANSPORTATION CHARGE TO SPEND THEIR VACATION IN THE COUNTRY.

Year.	Number of Schools.	Number of Pupils in the Schools.	By R. il.	By the United Steamship Co.	By other Steamship Companies' Boats.
1881	13	14,800	4 000	1,000	—
1882	13	16,000	4,000	1,000	—
1883	14	17,000	4,000	1,200	—
1884	15	18,800	4,500	1,200	—
1885	17	20,300	5,300	1,200	—
1886	20	22 000	5,700	1,400	—
1887	20	23,700	6,200	1,400	—
1888	21	25,500	6,500	1,400	—
1889	23	27,000	8,000	1,400	—
1890	23	28,500	8,000	1,400	—
1891	23	30,000	8,250	1,400	—
1892	25	31,600	8,250	1,400	—
1893	25	33,000	8 250	1,400	—
1894	26	34,000	10,000	1,400	—
1895	28	35,200	10,000	1,400	—
1896	28	36,400	10,000	1,400	900
1897	29	37,000	10,000	1,400	900
1898	30	37,300	11,000	1,400	900
1899	30	37,500	11,000	1,400	1,000
1900	30	38,200	11,000	1,400	1,000
1901	30	37,600	11,500	1,400	1,000
1902	30	37,600	11,900	1,400	1,000
1903	35	44,000	11,900	1,400	1,000
1904	36	45,600	13,600	1,400	1,000
1905	36	45,900	15,000	1,400	1,000
1906	36	46,200	15,000	1,400	1,000

the directors of the railway companies, as well as with the steamship companies, in order to obtain free transportation for the children—and it was granted. Now they could commence to send the poor children from the capital out to their hospitable hosts in the country, where the little ones could enjoy plenty of good and healthy eating as well as an unlimited amount of fresh air. A steadily-increasing number of requests to be sent out into the country kept on pouring in to the committee, and for a number of years the peasants sent in enough offers to keep pace with the demand. In 1857 the committee was able to send out about 700 children. In many cases the farmers did not confine themselves to showing mere hospitality, but when they had received such a poor child

hardly without any clothes at all, they often secured new clothes for it, and the child returned home dressed far better than when he left home. As the railroad system spun its net tighter and tighter over the country, the requests for being sent out increased, and that credit must be given the Danish Government, that no matter how large the number grew, all the children from Copenhagen got free passage all over the country; also the steamship companies showed the same kindness. The list on page 983 will show the development of this matter since 1881.

In short, this will say as much as that since 1881 34 to 38 per cent. of the children in the public schools of Copenhagen have been sent out into the country during the vacation. And who is it that receives them? Yes, they are first of all country people, who invite the children of their relatives, who have left the country to make their homes in Copenhagen, invite these children to come and spend the holidays with them; but then there are other farmers who open the doors of their hospitable homes, and readily bid the Copenhagen children welcome; and there are thousands of instances where year after year they invite their young guests out, and as the years pass by, keep the places open ready to receive their younger brothers and sisters. Yes, there are even instances where the hosts have taken such a fancy to their guests that they have adopted them as their own.

As for the administration, I beg to add that the tickets are sent from the railway and steamship companies direct to the School Board in Copenhagen. This institution has meanwhile obtained information from the various schools as to the number of pupils who already have places to go to; the necessary number of tickets are then sent to each school, where the headmasters fill them out with the pupils' names as well as with the place of destination. At the commencement of the vacation all the children are sent out all over the country by special trains.

The most characteristic features of the Danish, especially the Copenhagen, way of placing children during their vacation is then :—

1. To place them singly in private home;
2. The railroad corporations (the government's as well as the private ones) and also the steamship companies give them *absolutely free* transportation.

During the last six or seven years there have, through several teachers' associations, been started a number of vacation camps for those children that could not be cared for in private homes. To one of these associations the government has even granted a twenty-five years' lease on a portion of a public forest that stretches right into the sea; it is completely isolated, but with access to both the wood and the shore. For a cost of *ca.* 2,000 kr. (*ca.* £110) is here built a permanent wooden cottage, containing bed and dining-rooms, as well as a kitchen.

In order to make the illustration complete, it must be said that a movement in the opposite direction has taken place. One country school after the other brings its pupils into Copenhagen; then they are under skilled direction, taken about to be shown all the most important sights of the capital. If the visit stretches over more than one day, the children are lodged in some of the large public halls, where they also are treated with everything necessary, all without any charge. This is managed by

an association founded with this special work in view. The railroads also give these children, as well as the teachers, free transportation.

These forms of placing children during their vacation are entirely characteristic for Denmark, and it has been considered proper to inform the Congress about the same.

LES ÉCOLES MÉNAGÈRES AGRICOLES CONSIDÉRÉES AU POINT DE VUE DE L'HYGIÈNE ET DE L'ÉDUCATION GÉNÉRALE DE LA JEUNE FILLE.

Par P. DE VUYST, Bruxelles.

Les occupations agricoles sont, de l'avis de tous, les meilleures au point de vue de la santé. Elles sont variées et ont lieu souvent en plein air. Il en résulte nécessairement que les écoles ménagères agricoles constituent un type très recommandable d'institutions pour jeunes filles.

Elles conviennent à toutes les jeunes filles, parce que toutes aiment la campagne, le jardin, les fleurs, etc. Ce n'est que lorsque l'on comprend les choses de la campagne que celle-ci révèle tous ses charmes.

Ces écoles peuvent être considérées actuellement comme d'excellents établissements d'éducation générale. En effet, l'étude des sciences naturelles, trop souvent négligée ailleurs, y est forcément en honneur, ce sont presque les seules où l'on attache l'importance voulue aux notions nécessaires à la femme éducatrice. Dans bien des établissements, l'on oublie que pour être une ménagère accomplie, il faut connaître non seulement la cuisine et la couture, mais encore savoir bien élever ses enfants. Le nombre d'élèves étant assez restreint et se trouvant presque toujours dans un pavillon séparé, la vie y est plus familiale, la formation du caractère, de la personnalité, les soins particuliers y sont possibles comme en famille. Les exercices pratiques d'économie domestique, de laiterie, de jardinage sont les plus favorables à la santé et empêchent le surmenage de l'enseignement théorique. Nous avons pu constater que des jeunes filles très délicates à leur entrée dans ces écoles en sont sorties tout améliorées à tous les points de vue.

Voici quelques renseignements au sujet de cet enseignement spécial en Belgique.

Il est organisé dans trois catégories d'institutions :

(a) *Les sections ménagères agricoles*.¹—Elles ont pour but d'inculquer aux jeunes filles, tout en leur donnant l'instruction générale, des notions d'économie domestique et de comptabilité, des notions d'agriculture, de laiterie.

On consacre une heure par semaine à l'enseignement théorique de chacune de ces branches. Les exercices pratiques comprennent au minimum deux séances de deux heures par semaine.

¹ *Sections ménagères agricoles*.—Section ménagère agricole du pensionnat de Heule; section ménagère agricole du pensionnat de Waremmé; section ménagère agricole du pensionnat de Cortemark.

(b) *Les écoles ménagères agricoles.*¹—Ces écoles ont pour but de donner une *éducation professionnelle solide* aux jeunes filles qui se destinent à l'agriculture.

L'enseignement dans ces écoles est théorique et pratique. Le programme comprend, *outré les branches d'instruction générale* : les éléments d'histoire naturelle, les éléments d'agriculture, de culture potagère et de floriculture, les éléments de zootechnie, la laiterie, l'économie domestique, *les éléments de pédagogie et d'hygiène* et les notions de commerce et de comptabilité.

Dans certains établissements, on y ajoute des cours complémentaires de droit usuel et d'économie sociale.

Les cours sont répartis en un ou deux ans.

Le temps minimum consacré à l'enseignement spécial est de dix heures par semaine pour la théorie et de vingt heures pour la pratique.

(c) *Les écoles supérieures d'agriculture.*²—Elles ont pour but de donner une instruction supérieure aux jeunes filles appelées à participer à la gestion de propriétés, de grandes exploitations, ou qui, éventuellement, se destinent à l'enseignement ménager agricole.

L'enseignement est scientifique et pratique et dure au moins deux ans.

Outre l'étude plus approfondie des branches enseignées dans les écoles ménagères agricoles, notamment l'agronomie, l'hygiène des constructions rurales, la bactériologie, le programme de ces établissements comprend les cours de *pédagogie et de méthodologie*, de droit usuel et d'économie sociale.

L'enseignement théorique comprend au minimum dix heures par semaine et vingt heures au moins sont consacrées aux exercices pratiques.

On voit combien d'heures sont consacrés aux exercices pratiques agricoles. Ce régime est donc nécessairement hygiénique.

Dans ces diverses catégories d'écoles, les élèves sont habituées au travail, à l'esprit d'ordre et d'économie qui caractérisent la mère de famille modèle, et développent chez elle la simplicité, le goût de la vie rurale et lui font voir les avantages immédiats qu'elles retireront de l'instruction qu'elles reçoivent.

Afin de faciliter les études et d'éviter les pertes de temps occasionnées par les cours écrits en ce qui concerne les branches professionnelles, des résumés autographiés sont remis aux élèves ou bien il est fait usage de manuels.

Ces manuels conviennent aussi aux jeunes filles qui veulent s'initier à ces notions à domicile.

Les programmes détaillés et les prospectus sont envoyés sur demande par la direction des établissements.

Le personnel enseignant de ces écoles se tient au courant de tous les progrès concernant les branches du programme des écoles ménagères agri-

¹ *Écoles ménagères agricoles.*—École professionnelle pour jeunes filles à Bouchout-les-Anvers ; établissement des sœurs de l'Enfant Jésus à Brugelette ; école ménagère agricole du pensionnat d'Overysse ; école ménagère agricole des sœurs de Notre-Dame de Bastogne ; école ménagère agricole des sœurs de Saint-Vincent de Paul à Gysegghem ; école ménagère agricole du pensionnat de Herve ; école ménagère agricole de Virton ; école ménagère agricole d'Oosterloo ; école ménagère de Gooreind (Wuestwezel) ; école ménagère agricole du pensionnat de 's Gravenwezel ; école ménagère agricole du pensionnat de Celles (Hainaut), id. du pensionnat du Berlaer-lez-Lierre.

² École supérieure d'agriculture pour jeunes filles à Héverlé.

coles par des rapports et des discussions dans un Cercle d'études. Les principales études sont publiées dans le *Bulletin du Cercle d'études* du personnel enseignant des écoles ménagères agricoles, etc. (Secrétaire, Mme. Haentjens-Deleu, Borsbeke, Burst), et dans la *Revue de l'éducation familiale* (rue Rubens 44, Bruxelles).

LES RELATIONS ENTRE L'ÉCOLE ET LA FAMILLE.—LA LIGUE BELGE D'ÉDUCATION FAMILIALE.—LA COMMISSION INTERNATIONALE DES CONGRÈS D'ÉDUCATION.

Rapport présenté par P. DE VUYST (Bruxelles),
Délégué de la Commission Internationale des Congrès d'Éducation.

AFIN de pouvoir réaliser l'idéal en matière d'hygiène scolaire, il faut commencer avant l'école par la famille.

A quoi servent toutes les précautions prises à l'école pour éviter des maladies, si l'on y amène des enfants mal soignés à la maison, ayant déjà contracté des défauts physiques et autres, apportant les germes de maladies, etc.?

Il est donc indispensable de commencer par le commencement ; tous les efforts devraient se porter vers l'application de l'hygiène privée.

Ce qui est vrai pour l'hygiène physique est vrai aussi pour l'hygiène morale. Le caractère des enfants est souvent déjà formé à l'âge où ils se rendent à l'école. L'école peut certainement avoir quelque influence sur le caractère, mais son but principal est plutôt l'instruction.

La famille est la pépinière. C'est là que l'on forme les sujets forts de corps et forts de caractère.

Plus tard toute la science du pédagogue et de l'hygiéniste ne suffira pas pour redresser une à une les erreurs commises au début.

Il est donc de l'intérêt même des directeurs d'école de faire en sorte que l'éducation de l'enfant soit bien faite en famille et de favoriser plutôt les associations qui ont pour but de mettre la famille au courant, et de se rencontrer avec les parents dans ces associations.

C'est ce qui est perdu de vue par un grand nombre d'hommes d'œuvres ; ils organisent une foule de Ligues qui ont actuellement leur raison d'être et qui font beaucoup de bien, mais qui ne coupent pas le mal dans sa racine.

Au lieu d'organiser une Ligue contre l'absentéisme scolaire, une autre contre l'alcoolisme, une autre contre l'abus du tabac, une autre encore contre la tuberculose, etc., il serait plus simple d'organiser des cercles de parents dans le but de faire appliquer dans la famille les principes de l'hygiène, de la morale, etc. Sans cela il faudra, bientôt, autant de Ligues que de défauts à combattre, de maladies à éviter, et encore les résultats seront-ils minces.

Il serait donc infiniment plus désirable, par exemple, de faire prendre dans la famille les précautions nécessaires pour éviter la tuberculose que

de laisser devenir les enfants tuberculeux et devoir ensuite prendre des précautions pour éviter la contagion à l'école et organiser des sanatoriums.

Évidemment cet idéal on ne peut l'atteindre tout de suite. Mais on le perd trop de vue, on n'y tend pas assez. Les diverses ligues fondées actuellement devraient y tendre davantage. En Belgique il y a huit ans M. Proost a fondé une Ligue pour vulgariser dans les familles les notions pratiques de la pédagogie par des conférences et par sa Revue.¹ En Angleterre la "Parents' National Educational Union" poursuit un but analogue. Aux États-Unis il y a de nombreux clubs de mères, "Mothers' Clubs." En France il existe des Ligues qui organisent des conférences aux parents.

Il est à remarquer que ces Ligues tendent à perfectionner l'éducation physique comme l'éducation morale avant l'école, pendant l'école et après l'école.

En soignant l'hygiène des enfants avant et pendant l'école, les parents contribueront plus que personne à améliorer l'hygiène scolaire.

Parents, professeurs et hommes d'action de tous les pays ont éprouvé le besoin de se sentir coude à coude, et de s'entretenir des graves problèmes que présente l'œuvre de l'éducation.

Une première occasion leur a été offerte par le *Congrès international de Liège* en 1905, congrès organisé sous le patronage du Gouvernement belge.² Douze cents adhérents ont répondu à l'appel, vingt gouvernements étrangers y étaient représentés. Plus de deux cent cinquante spécialistes avaient envoyé des rapports. Deux sections ont organisé des comités internationaux. A l'assemblée générale le délégué de l'Union des Parents d'Angleterre proposa de fédérer toutes les sociétés de parents et d'éducateurs et un délégué du Grand-Duché de Luxembourg proposa d'établir un lien entre les futurs congrès. Ces propositions donnèrent lieu à l'organisation d'une *Commission internationale*.

Le deuxième congrès international vient d'avoir lieu à Milan, sous le haut patronage de S.M. le roi d'Italie. Son succès n'a pas été moins grand que celui de Liège.³

Il n'est pas nécessaire d'insister sur l'importance du rôle de cette commission internationale au point de vue humanitaire et social.

Il y a lieu d'espérer que cette commission orientera tous les efforts dans cette direction. Toutes les œuvres gagneraient à accentuer leur action éducative en commençant par la famille. Les congrès rallieront toutes les bonnes volontés et toutes les opinions : car dans le domaine de la famille il ne peut être question d'imposer des tendances. L'initiative privée y occupera la première place. Il appartiendra à chaque famille, à chaque homme d'œuvre de choisir, dans les indications des congrès, celles qui lui conviendront le mieux pour son idéal de progrès.

La Commission internationale est présidée par Madame Lucie Félix-Faure-Goyau, dont le père était Président de la République Française.

Le siège du bureau de cette commission est rue Rubens 44, à Bruxelles, Belgique.

¹ *Revue de l'Éducation familiale*, 44 rue Rubens, Bruxelles.

² On peut obtenir les comptes-rendus en s'adressant à M. Pien, 44 rue Rubens, Bruxelles (Belgique).

³ Pour les comptes-rendus du congrès de Milan, prière de s'adresser au secrétariat général, 7 via Vivajo, Milan.

Les gouvernements, qui attachent tous une importance primordiale à l'éducation, sont invités à désigner des délégués pour faire partie de cette institution internationale.

Cette délégation permanente est indépendante des délégations spéciales qu'on pourrait juger utile de faire pour les congrès.

Chaque société pédagogique agréée par la Commission peut s'y faire représenter par un délégué.

Les personnes qui veulent s'intéresser aux travaux de la Commission internationale peuvent être inscrits comme membres affiliés.

Les membres de la Commission internationale recevront les publications relatant les actes de la Commission, les programmes des Congrès internationaux organisés à son intervention, etc.

Enfin, un nouveau Congrès international aura lieu à Bruxelles en 1910; un comité national sera formé dans chaque pays pour faire connaître ce Congrès. Le comité anglais est en voie de formation, grâce aux bons offices de Mrs. Fletcher, 28 Ashley Place, Westminster, London, S.W. *Nous convions tous les membres du Congrès d'hygiène scolaire à participer à ce Congrès,*¹ dans les vues exposées plus haut, c'est à dire en vue d'amener une plus grande collaboration entre la famille et l'école pour l'hygiène et pour l'éducation.

¹ Secrétariat général, rue Rubens No. 44, Bruxelles, Belgique.

APPENDIX.

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PERMANENT INTERNATIONAL COMMITTEE.

- SIR T. LAUDER BRUNTON, Bart., LL.D., M.D., D.Sc., F.R.C.P., F.R.S., Consulting Physician to St. Bartholomew's Hospital (President of the London Congress).
- Dr. LE GENDRE, méd. des hôp. de Paris.
- Dr. ALB. MATHIEU, méd. des hôp. de Paris, Président de la ligue des médecins et des familles pour l'Hygiène scolaire.
- Dr. CHANTEMESSE, Prof. à l'école de méd., Inspecteur général des services sanitaires, Paris.
- Dr. J. COURMONT, Prof. d'hygiène à la Faculté de Médecine de Lyon.
- TH. WITRY, Inspecteur principal, Luxembourg.
- Dr. EDM. JOS. KLEIN, Professor of Science, Diekirch (Luxemburg).
- Dr. med. PATRICIO BOROBO Y DIAZ, Professor of Pædiatrics of the Faculty of Medicine, Saragossa.
- Dr. A. M. Y VARGAS, Professor of Pædiatrics, Barcelona.
- Dr. med. MANUEL DE TOLOSA LATOUR, Member of the Royal Academy of Medicine, Prof. of Pædiatrics at the Faculty of Medicine, Madrid.
- Dr. med. CONST. SAVAS, Prof. of Hygiene and Director of the Institute of Hygiene, Athens.
- Dr. med. R. NICOLAIDES, Professor of Physiology, Athens.
- Prof. Dr. med. et phil. GRIESBACH, Vorsitzender des Allgemeinen deutschen Vereins für Schulgesundheitspflege, Mülhausen (Alsace).
- v. SCHENKENDORFF-GÖRLITZ, Vorsitzender d. Zentralausschusses f. Volks-u. Jugendspiele u. d. deutsch. Vereins f. Knabenhandarbeit.
- Prof. Dr. ERISMANN, Zürich.
- Dr. LUIGI PAGLIANI, Prof. of Hygiene, Turin.
- Dr. ALFONSO DI VESTEA, Prof. of Hygiene, Pisa.
- Dr. ANGELO MOSCO, Prof. of Physiology, Turin.
- Dr. P. M. NOÏKOV, Professor of Pedagogy at the University, Sofia (Bulgaria).
- Dr. BATUT, Professor of Public Health, Belgrade.
- Dr. J. GEORGOV, Professor of Philosophy and Pedagogy at the University, Sofia (Bulgaria).
- Dr. med. VICTOR BABES, Professor of Hygiene, Bucharest.
- Dr. med. FR. SCHMID, Direktor des Schweizer, Gesundheitsamtes, Präsident der schweizerischen Gesellschaft für Schulgesundheitspflege, Berne.
- Prof. Dr. med. AD. BAGINSKY, Direktor des Kaiser und Kaiserin Friedrich Kinderkrankenhauses u. V. rsitzender des Berliner Vereins für Schulgesundheitspflege, Berlin.
- Geh. Med.-Rat. Prof. Dr. HOFFA, Direktor des Universitätspoliklinik für orthopädische Chirurgie, Berlin.
- Geh. Med.-Rat. Prof. Dr. med. D. FINKLER, Direktor des hygienischen Univ.-Instituts, Bonn.
- Prof. Dr. LEO BURGERSTEIN, VI/2 Bürgerspitalgasse 28, Vienna.
- Dr. med. H. SCHUSCHNY, Schularzt und Professor der Hygiene an der Staatsoberrealschule—Präsident des Fachkomitees der Schulärzte und Professoren der Hygiene, Buda-Pesth.
- Kgl. Rat. Prof. Dr. med. LEO LIEBERMANN, Direktor des hygienischen Instituts der Universität, Budapest.
- Kgl. Rat. W. SZUPPAN, Direktor der Handelsakademie und Referent des Landes-Unterrichtsrates, Budapest.
- Prof. G. STANLEY HALL, President of Clark University, Worcester, Mass.
- Dr. CLEMENT DUKES, Rugby, Fellow of the Royal College of Physicians of London, Physician to the Hospital of St. Cross and to Rugby School.
- MATTHEW HAY, M.D., Professor of Forensic Medicine and Hygiene, Medical Officer of Health, University of Aberdeen.
- Geh. Med.-Rat. Prof. Dr. A. EULENBURG.
- Prof. Dr. med. O. BUJWID, Director of the Institute of Hygiene, Cracow.
- Prof. Dr. med. F. HUEPPE, Director of the Institute of Hygiene of the German University, Prague.
- Dr. med. FR. SKWORTZOW, Professor der Hygiene an der Universität, Charkow, Russia.
- Prof. Dr. M. MISHIMA, Principal Medical Officer, Ministry of Education, Tokio.
- Prof. NICHOL MURRAY BUTLER, President of Columbia University, New York.
- Prof. W. T. PORTER, M.D., Physiological Laboratory, Harvard Medical School, Boston, Mass.
- J. H. BENSE, Voorzitter van de Vereeniging tot Vereenvoudiging van Examens en Onderwijs te Anheim.
- Prof. Dr. med. C. EYKMAN, Director of the Institute of Hygiene, Utrecht.
- Dr. med. C. WINKLER, Professor of Psychiatry, Amsterdam.
- Prof. Dr. M. C. SCHUYTEN, Voorzitter van het algemeen paedologische Gezelschap, Bestuurder van den paedologische Schooldienst en van het stedelijk paedologisch Laboratorium Antwerpen.
- Dr. E. B. ALMQUIST, Professor of Hygiene at the Medical and Chirurgical Institute, Stockholm.
- Dr. med. AXEL JOHANNESSEN, Professor of Pædiatrics, Christiania.
- Dr. HARALD WESTERGAARD, Prof. d. Staatsw. Encyklop. u. Statistik, Copenhagen.
- Prof. Dr. med. AXEL HERTEL, Medical Officer of Schools, Copenhagen.
- Dr. med. LAITINEN, Prof. der Hygiene und Direktor des hygien. Instituts, Helsingfors, Finland.
- Prof. Dr. med. ALB. PALMBERG, Helsingfors.
- JOHN A. BERGSTROM, Ph.D., Professor of Pedagogy, Bloomington, Indiana University.
- Prof. WILLIAM R. SMITH, M.D., D.Sc., F.R.S. (Edin.), Principal, Royal Institute of Public Health, London.
- Prof. CURRY CABRAL, Lisbonne.
- Prof. ALFREDO DA COSTA, Lisbonne.
- Prof. CH. CHABOT, Lyon.
- Prof. G. W. CHLOPLIN, Ministerium der Volksaufklärung, St. Petersburg.
- The Hon. Sir JOHN COCKBURN, K.C.M.G., M.D., London.
- JAMES KERR, M.A., M.D., D.P.H., Chief Medical Officer (Education), London County Council.
- Prof. LEFEVRE, Lille.
- Prof. WILLIAM OSLER, M.D., LL.D., F.R.S., Oxford University.
- Dr. Med. da COSTA SACADURA, Lishonne.
- Prof. C. SIGALAS, Université, Bordeaux.
- E. WHITE WALLIS, F.S.S., Secretary and Director, Royal Sanitary Institute, London.
- Dr. F. ZOLLINGER, Secrétär des Erziehungswasens des Kantons, Zurich.
- CLOUDESLEY BRERETON, M.A., London.
- Dr. OVIDE DECROLY, Bruxelles.
- Dr. LUTHER H. GULICK, New York.
- Dr. HENRY P. WALCOTT, Cambridge, Mass., U.S.A.

INTERNATIONAL COUNCIL

CONSISTING OF

PRESIDENT OF PREVIOUS CONGRESS

PRESIDENT OF CONGRESS JUST HELD

PRESIDENT ELECT OF NEXT MEETING

THREE MEMBERS REPRESENTING LAST PLACE OF MEETING

THREE MEMBERS REPRESENTING NEXT PLACE OF MEETING

THREE MEMBERS REPRESENTING OTHER COUNTRIES

PRELIMINARY PROGRAMME.

SECOND INTERNATIONAL CONGRESS
ON SCHOOL HYGIENE.

LONDON, AUGUST 5th TO 10TH, 1907.

Patron :

HIS MAJESTY THE KING.

Vice-Patrons :

H.R.H. THE PRINCE OF WALES, K.G.

H.R.H. THE DUKE OF CONNAUGHT, K.G.

H.I.H. PRINCE EITEL FRIEDRICH.

M. EMILE LOUBET, Ex-President of the French Republic.

President :

SIR LAUDER BRUNTON, BART., LL.D., M.D., D.Sc.,
F.R.C.P., F.R.S.

INTRODUCTION.

In every civilised country the attention paid to all questions of Hygiene has greatly increased during the last few years, and it has been more than ever recognised that the foundation of good citizenship can only be laid in healthy infancy and school life.

In Great Britain the Education Laws have been revised and supplemented in the direction of hygienic development ; Royal Commissions have inquired into mental conditions ; Parliamentary Enquiries and Departmental Committees have dealt with questions of physical degeneration ; and numerous Societies dealing with childhood, child study, parental obligation, hygiene, and allied subjects, have been steadily at work.

In other countries a similar movement has been going on with the purpose of making the conditions of education as hygienic as possible.

It has thus become generally admitted that scientific methods must be carefully followed out in schools, especially in teaching younger children—brains must not be over-taxed, weak frames must be strengthened by systematic bodily training, and the successful development of the race ensured by attention to the health of its children, especially during their school life.

As it is evident that these aims can be facilitated and advanced by united effort, an International Committee has been formed to hold triennial Congresses on School Hygiene.

The first Congress was held at Nuremberg in Easter week, 1904. It was attended by about fifteen hundred delegates representing almost every civilised state. The influence of that Congress has already made itself felt in many countries in the literature, laws and regulations connected with health and education.

This Programme was also printed in the French and German languages.

At that Congress it was determined that the great Educational and Hygienic movement going on in the British Empire should be acknowledged by holding the next meeting in London, and the second Congress was accordingly fixed to be held there from August 5th to 10th, 1907, under the Presidency of Sir Lauder Brunton.

Probably the third Congress will be held in France in 1910, but this will have to be decided at the concluding session.

For the English Congress to be completely successful, each locality or authority should forthwith appoint a representative to act on the General Committee of the Congress, and to attend its deliberations. Every authority so represented would be likely to derive considerable benefit, in respect both of educational efficiency and administrative economy, from the discussions, the Exhibition, and the publications of the Congress.

Every paper for a special sectional meeting must be delivered, as soon as possible, to the Organising Committee of the author's country.

GENERAL ARRANGEMENTS.

TICKETS.

The charge for Members' tickets is as follows:—

For the British Empire	...	...	One Guinea (21/-)
Do. do. United States of America	...	...	Five Dollars (\$5)
Do. do. Latin Union	...	...	Twenty-five Francs (25fr.)
Do. Germany	...	...	Twenty Marks (m.20)
Do. Austria	...	...	Twenty-four Kronen (Kr.24)

For other countries the equivalent of twenty-one shillings, English.

Remittances to be sent to the Treasurer, Sir Richard B. Martin, Bart., at 68, Lombard Street, London, E.C., or through the authorised committee of the respective nationalities.

The full name and address, together with full particulars of position and rank (preferably by enclosing a visiting-card), must be sent with payment, upon receipt of which a voucher will be issued, to be exchanged, before the commencement of the Congress, in the Reception Room, University of London, South Kensington, for a final ticket,* for the purpose of acquiring literature published by the Congress.

This ticket must be shown at any time upon demand; it entitles the holder to admission to all the scientific and social meetings, to the right of voting, and to obtain the literature and proceedings of the Congress.

Ladies' tickets are issued at half the price of members' tickets. These tickets admit to the meetings and all social entertainments, but do not include the right to a copy of the Proceedings. Ladies desirous of becoming full members of the Congress are required to pay the ordinary member's subscription.

* This Ticket will be arranged as a voucher by which the member can obtain the literature published by the Congress.

RECEPTION ROOM AND PLACES OF MEETING.

On Saturday, August 3rd, an office will be opened at the University of London, South Kensington, where all information may be obtained; the programme of the Congress distributed; and hotel and lodging information given. It is, however, particularly recommended that those attending the Congress should secure accommodation in advance.

The Reception Room and Office of the Congress will be opened on Monday, August 5th, at 9 a.m., in the University of London, South Kensington.

At this Office the following business will be transacted :

1. The issue of members' and ladies' tickets. Registration of members. Persons attending the Congress are earnestly requested to sign the form provided, and to hand in with it a visiting-card containing their London address distinctly written. This is indispensable for compiling a correct list of those present. Delegates are requested to state the authorities by whom they are delegated.
2. The issue of badges, pamphlets, and all literature of the Congress. Members when applying for these must show their Congress tickets.
3. The issue of tickets for entertainments and excursions.

The Exhibition of School Building and Furnishing Appliances, and Post Office, Refreshment, Reading, and Writing rooms will be arranged in the same building.

The Addresses, General Meetings, and Meetings of Sections will be held in the University of London, Imperial Institute, Central Technical College, South Kensington.

Detailed particulars will be given in the Daily Journal.

MEETINGS, ADDRESSES, AND PAPERS.

Information relating to the Congress will, as far as possible, be issued in the three languages officially adopted : English, French, and German.

The proceedings will consist of General Discussions, Sectional Meetings and Lectures.

The President will take the chair at the General Meetings, and the Presidents of Sections at the Sectional Meetings. The agenda are arranged by the Committee.

The President, Vice-Presidents, and Secretaries form the Committee of the Section.

The General Meetings for set discussions will be arranged to include short speeches by distinguished representatives of different countries. The Lectures will last about 45 minutes, no discussion will be allowed at these lectures.

At the closing General Meeting various business matters must also be settled; for instance, the time and place of the next Congress, certain votes proposed, resolutions passed, and so on.

THE ADDRESSES AND PAPERS, or abstracts thereof, will be printed by the Committee in London before the meeting of the Congress, and may be obtained during the Congress. Secretaries are requested to impress upon authors the importance of sending the MSS. of their papers as early as possible to the Secretaries of the Congress, in any case, **not later than June 24th**, as it may not be possible to arrange for papers received later to be included in the Programme. Authors will be allowed five minutes to introduce the main arguments of the paper before the discussion begins. Papers are limited to 3,000 words.

- (a) The Committee reserve to themselves the right of refusing and of abridging any papers which may be sent in; and even in the case of those accepted the discussion of them must depend on the time at the disposal of the Meeting.
- (b) No Paper previously published may be read.
- (c) No Address or accepted Paper may be published by the Author without the special permission of the Committee.

A SHORT ABSTRACT, not exceeding 1,000 words, should accompany every paper, both for the convenience of the Press at the Congress, and for insertion, subject to the approval of the Committee, in the Proceedings of the Congress, should it not be deemed desirable to publish the paper *in extenso*.

All papers or subjects for discussion, must be accepted by the London Committee of the Congress before being adopted.

RESOLUTIONS.

RESOLUTIONS passed in the Sections must be laid before the closing General Meeting for confirmation. The number of persons present, and the proportions voting, must be recorded by the Chairman for the information of the Council.

No Resolution shall be proposed in any of the Sections, unless sent to the Secretary of the Section in time for approval and insertion in the Programme for the day on which it is to be proposed.

No Resolutions shall be put to a Meeting unless in the opinion of the President (or Chairman for the time being), the Section is adequately represented.

RULES OF DISCUSSION IN SECTIONS.

In the Sectional Meetings discussions of set subjects (*Referate*) will take place, and also papers which have been offered and accepted will be submitted and discussed.

The set subjects for discussion will be determined by the Congress Committee with regard to matters of special interest in School Hygiene. These will be selected from medical

paedological or technical subjects. Persons opening discussions should prepare, as far as possible, a summary, which will be printed beforehand so that members may be able to contribute materially to further discussion. The time allowed to the openers is 15 minutes.

Papers akin to the subjects of set discussions, will be taken as far as possible with these and included in the discussion. Papers will be grouped according to their contents and discussed together, and will be taken in the order arranged in the programme. Each speaker in discussion is allowed eight minutes; the Chairman will ring a bell at the end of five minutes to warn speakers of their time; a second bell will be rung at the end of eight minutes, and then the speaker must at once sit down. Ten minutes will be allowed the reader for reply. As a rule no one may speak twice on any subject, except by permission of the Chairman.

The order of proceeding in the meetings follows Parliamentary usage. In Sectional Meetings the Chairman, with his Secretaries, is responsible. They must, therefore, be present during the whole of the meeting.

- (a) The Secretary keeps the minutes, and is responsible for the list of speakers, and the corrected copies of papers read.
- (b) Each introducer or reader of a paper has, on finishing, to give a correct proof of his remarks to the Secretary.
- (c) Each speaker in the discussion has to send up his card before rising to speak. Immediately on the conclusion of his remarks he will receive from the Secretary a paper with his name, on this he is to make a short note of the part he takes in the debate. The Chairman has the responsibility of looking over and verifying this note.

With regard to papers submitted and remarks of speakers, it remains with the Committee whether these shall appear verbatim or in abstract, and whether they shall be published, if in any other language than English, French or German. Each speaker is at liberty to publish his contributions elsewhere after they have appeared in the official Transactions of the Congress.

Daily during the Congress, one hour before the commencement of the morning sessions, the Programme of the day, the list of speakers for the sections, the attendance list, and all necessary business announcements will be published.

At the conclusion of each sectional meeting, the officers will hold a short conference, to arrange the programme for next day, and hand this in to the general office for publication in the Daily Journal.

At the end of the Congress, the Permanent International Committee will hold a special meeting for the purpose of considering the steps necessary to be taken preparatory to the next International Congress.

Notes on the Formation of Local Committees, and Suggestions for their Guidance in Promoting the Success of the Congress.

As soon as a Committee is formed to represent a Country, State, Department, Town, or District, a Chairman should be appointed, also a Secretary.

The members of the Committee should include those interested in Education, and other influential persons in the district.

THE DUTIES OF COMMITTEES.

1. Are to create an interest in the district in the work of the Congress, by obtaining the assistance first of the Education Authorities and others officially responsible for the training of children and young people.
2. To diffuse information relating to the Congress among Teachers, Medical Officers, Medical Men, Architects, Members of Municipal Authorities, Educational Authorities, Societies and others.
3. To give assistance to the Central London Committee by suggesting names of those who would be likely to read papers, or in any other way contribute to the proceedings of the Congress.
4. To suggest two or three subjects which they consider of first importance for general discussion.
5. To obtain the appointment of Delegates to the Congress, and to influence others to attend the meeting.
6. To interest manufacturers in the Exhibition of School Appliances, Equipment, and Construction to be held in connection with the Congress.

DUTIES OF A SECRETARY TO A LOCAL COMMITTEE.

1. To advise the London Office of the names of the Chairmen of the Committee, Members, and other officers, together with their addresses.
2. To inform the London Office how many circulars, programmes, or other papers relating to the Congress will be required for circulation in the district.
3. To obtain interest of the Press in the district, and to keep them in touch of the doings of the local Committee and of the progress of the arrangements for the Congress.
4. To obtain and forward the manuscripts of such papers as are promised through his Committee.

Expenses of Local Committees must be met by a Special Fund collected for the purpose in each centre. All subscriptions for Congress Tickets to be forwarded in full to the London Office.

NOTES ON DUTIES OF SECRETARIES OF SECTIONS AND COMMITTEES.

Two Secretaries for each Section are appointed to keep minutes of the Section Meetings, recording the particulars of all Papers read, the names and addresses of the speakers joining in the discussions, and also particulars of any resolutions that may be brought before the Section. These minutes should be verified by the signature of the President or Chairman for the time being. The Secretaries of each Section also prepare a *resumé* of the work done in their Sections, and read the same at the concluding General Meeting; the minute book and other papers are to be handed to the Hon. Secretaries at the close of the Meeting. The rooms be prepared for the meeting, but it would be well if the Secretaries on their arrival would see that the necessary paper, pens, chalk, duster, etc., are provided, and arrangements made for Diagrams.

A meeting of all the Secretaries of Sections will be arranged at an early date.

The Committee of each Section consists of the President, Vice-Presidents, and Secretaries. The Committee of each Section will meet each morning to arrange the proceedings, and and decide who should be specially asked to speak in the discussion.

Committees should hold regular monthly meetings to consider the arrangements for the programme for their Section, all proposals for the programme to be first submitted to the Organising Committee for their approval.

Secretaries to suggest to the Committee of their Section the names of those who would be likely to contribute the most valuable papers on the subjects treated in their Section, to attend the meetings of their respective Sections throughout, and to afford advice and information to the members.

To suggest any technical visits that would be of special interest to the members. These should only be arranged in the afternoons, and care should be taken not to clash with excursions or visits already arranged by Reception Committee.

To take charge of the general arrangements of the meetings of their Section, and to ensure that one of the Officers is present at each meeting who can speak French and German.

To advise the General Secretaries beforehand with regard to any arrangements required for lanterns, models, etc.

To see that suitable arrangements are made for the preparation and ventilation of the Sectional Meeting rooms, the hanging of Diagrams, etc., to placard outside the Meeting room a list of the papers to be read, and to erase each paper as read.

To supervise the hanging of Diagrams, to see to their being carefully taken down and returned to the Congress office, and their receipt noted.

PROGRAMME OF MEETINGS AND EXCURSIONS.

DAY.	MORNING.	AFTERNOON.	EVENING.
SATURDAY, August 3rd.	9 a.m.—Reception Room open. 12 noon.—Informal Receptions in the University.	3 p.m.—Informal Receptions in the University. 5—7 p.m. Reception at Londonderry House.	8.30—11 p.m.—Reception at Caxton Hall.
SUNDAY, August 3th.	11 a.m.—Services at Cathedrals.	Visit to Bisley Training Camp.	
MONDAY, August 5th.		3 p.m.—Opening by THE RIGHT HON. THE EARL OF CREWE. Address by the President, SIR LAUDER BRUNTON.	8—11 p.m.—First General Meeting. Foreign Introductory Address. Reception and Conversazione in the London University, Imperial Institute and Exhibition.
TUESDAY, August 6th.	10 a.m.—2 p.m.—Meeting of Sections. 12 noon.—General Meeting for Set Discussion. 3 p.m.—5 p.m.—Section II., afternoon Session.	2.30 p.m.—Visit to L.C.C. Schools in N.E. London. 3 p.m. Garden Party at the Royal Normal College for the Blind, Upper Norwood. 3 p.m.—Visit to Tring Park and Museum of Zoological Collections. 3 p.m.—Visit to Physical Training College, Dartford. 3 p.m.—Visits to University College New School Buildings, Hampstead, and the King Alfred School. 4.45 p.m.—Meeting of International Committee.	5.30 p.m.—Lecture on "The Effect of School Training on Mental Discipline and Control in Adolescence," by the RIGHT REV. BISHOP WELLDON, D.D. 8.30 p.m.—Reception and Evening Fête in the Royal Botanic Gardens.

DAY.

WEDNESDAY,
August 7th.

MORNING.

- 10 a.m.—2 p.m.—Meeting of Sections.
12 noon.—General Meeting for Set Discussion.
10 a.m.—2 p.m.—Meeting of Sections.
12 noon.—General Meeting for Set Discussion.
3 p.m.—5 p.m.—Section II. Afternoon Session.

THURSDAY,
August 8th.

AFTERNOON.

- 12 noon.—Visit to Stratford-on-Avon.
2.30 p.m.—Jiu-Jitsu Display.
3 p.m.—Visit Clapham High School for Girls.
2 p.m.—Visit to "Heritage" School for Cripples, Chailey.
2.30 p.m.—Visit to L.C.C. Schools in West London.
3 p.m.—Reception at St. Paul's Girls' School, Hammersmith.
3 p.m.—Visit to the Horticultural College at Swanley.
3.15 p.m.—Physical Exercise Display.

FRIDAY,
August 9th.

- 10 a.m.—2 p.m.—Meeting of Sections.
12 noon.—General Meeting for Set Discussion.
1.30 p.m.—Closing General Meeting.

(11)

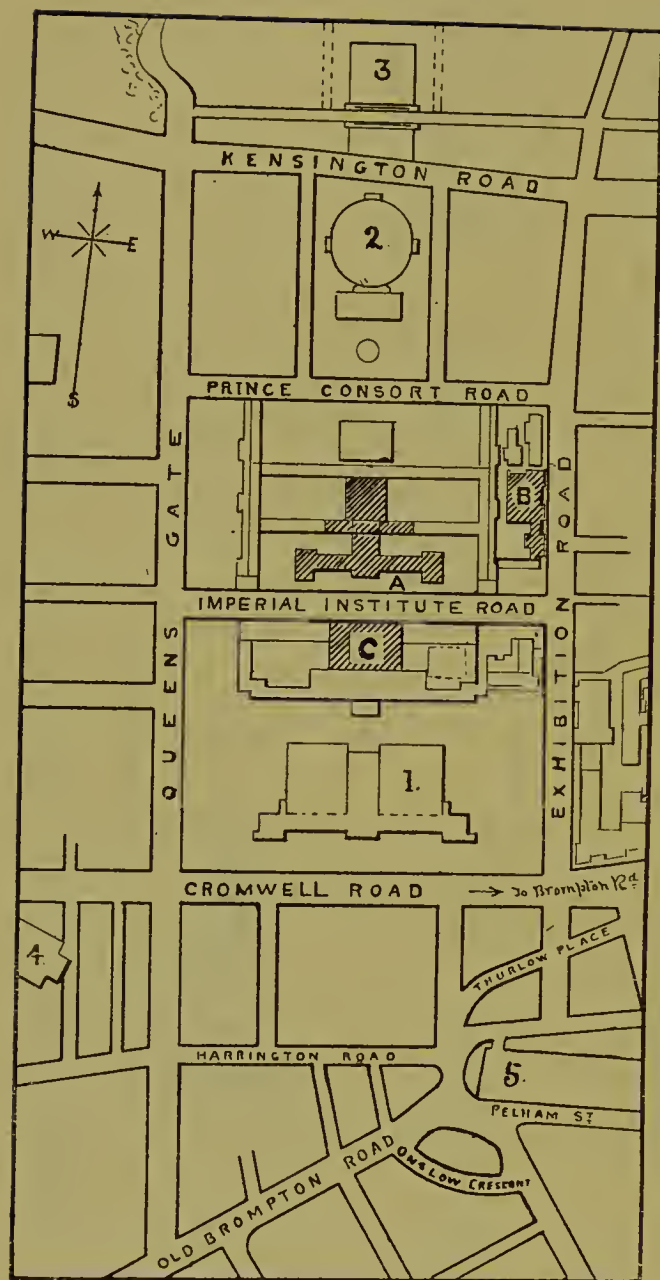
SATURDAY,
August 10th.

Excursions to—

- Cambridge University.
Haslemere Educational Museum.
Brighton. Garden Party in the Royal Pavilion.
Hindhead.
Windsor Castle and Eton College.
Oxford.

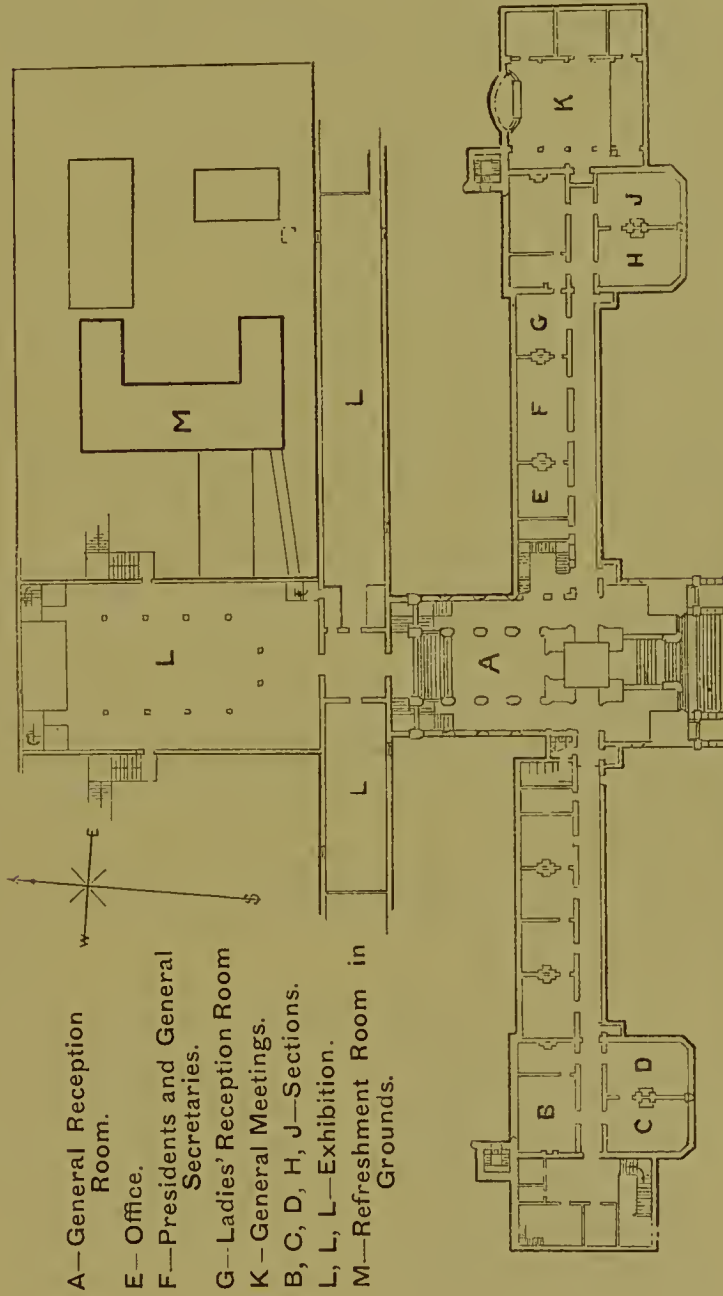
EVENING.

- 5.30 p.m.—Lecture on "Hygiène du Sport pour les Femmes, et Filles," par Mons. le Dr. DOLLÉRIE, des Hôpitaux de Paris, Membre de l'Académie de Médecine.
7.30 p.m.—Congress Dinner.
8 p.m.—Lecture "Über Beziehungen zwischen Medizin und Paedagogik," von Prof. Dr. med. et phil. GRIESBACH, Vorsitzender des Allgemeinen deutschen Vereins für Schulgesundheitspflege, Mülhausen—Els.



(A) University of London. (B) Central Technical College.
(C) Royal College of Science.

- (1) Natural History Museum. (2) Albert Hall.
- (3) Albert Memorial. (3) Gloucester Road Station.
- (5) South Kensington Station.



IMPERIAL INSTITUTE AND UNIVERSITY OF LONDON.

RAILWAY AND TRAVELLING ARRANGEMENTS.

The English Railway Companies have decided to issue return Tickets to London at a single fare and a quarter, available from August 1st to August 12th. Certificates necessary to obtain this reduction will be supplied with Congress Tickets. Return Tickets, at a single fare and a quarter for the double journey will, for residential purposes only, be issued to members of the Congress, on production of their Congress Tickets, from London to stations not more than fifty miles distant—(minimum charge, 1s.).

Travellers from the Continent, *via* the South Eastern and Chatham Railway, on presentation of their Members' Tickets, can receive special Return Tickets from Paris to London, at 58s. 4d. first class, 37s. 6d. second class; or *via* the London, Brighton and South Coast Railway (Dieppe and Newhaven), at 39s. 4d. first class, 30s. 4d. second class. Reductions in fares from Italy can be obtained on application at any of the Italian Railways on production of Members' Tickets.

The French Railways will grant 50 per cent. reduction.

The Zeeland Steamship Company (Queenboro Flushing Line) will grant Delegates, travelling in parties of at least ten, a substantial reduction on the prices of any tickets over the lines of the Royal Mail Route, *via* Queenboro-Flushing, Netherland State Railway, and North Brabant German Railway, as well as for the S. E. and C. Railway line between Queenboro pier and London. Passengers from the Netherlands should apply to the Zeeland Steamship Company at Flushing, whilst parties from Germany, Austria-Hungary, Switzerland, Denmark, Scandinavia and Russia, should apply to the North Brabant German Railway at Gennep (Holland).

The Atlantic (Shipping) Lines (comprising the Allans', Americans', Anchor, Canadian Pacific, Cunard, Dominion, and White Star), and the Norddeutscher Lloyd, do not see their way to making reduction.

The Blue Anchor and Aberdeen Lines of Steamers will give Delegates travelling from Australia, and returning within six months, an abatement of 20 per cent. off the fares each way.

The Orient Royal Mail Line will give Delegates an abatement of 20 per cent. off the first and second saloon single fares.

The Union Castle Mail Steamship Company will give an abatement of 20 per cent. off the two single fares for the return journey, to Delegates travelling from South Africa.

HOTEL AND LODGING ARRANGEMENTS.

For the convenience of Delegates and Members attending the Congress, arrangements have been made by which Messrs. Cook & Son, of Ludgate Circus, E.C., will obtain Hotel Accommodation.

It is necessary that the name of the Member, and, preferably, his address card, should be sent to Messrs. Cook & Son, together with a definite statement of what his requirements are, the terms he is prepared to pay, and the names of those by whom he will be accompanied.

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Communications to Messrs. Cook & Son, or to their Agents, may be addressed in any language.

EXCURSIONS, ENTERTAINMENTS AND RECEPTIONS.

Particulars of these will be published in a Special Programme, and Tickets, List of Places to be visited, can be obtained at the Reception Room during the Meeting.

EXHIBITION OF SCHOOL BUILDING AND FURNISHING APPLIANCES.

In order, as far as possible, to illustrate practically matters coming under the consideration of the Congress, an Exhibition will be organised and arranged in the University Building by The Royal Sanitary Institute, in which the planning, construction, and equipment of school buildings will be illustrated, and school furniture and teaching appliances of all kinds exhibited.

The Exhibition will be so arranged as to illustrate the whole range of school hygiene, both historically and according to everyday practice, and it is hoped that many exhibits will be sent by the English Colonies and by other countries, so that those present at the Congress may have the opportunity of comparing the construction and equipment of schools in various countries.

The Exhibits will be classified under the following headings :—

Drawings and Designs.

Plans and Elevations.

Arrangements of Class Rooms.

Models.

Methods of adaptation and improvements in structure.

Building Materials and Construction.

Concrete and Stone.

Bricks, plain and glazed.

Carved bricks for floor and wall angles.

Damp-proof courses.

Doors and partitions.

Staircases.

Floor and Wall Surfaces.

Fireproof and soundproof flooring.

Dust removal and prevention.

Soaps and floor polishes.

Soundproof and fire-resisting partitions and wall coverings.

Water Supply.

Iron, lead, and glazed pipes.

Cisterns, and storage vessels.

Taps.

Filters.

Cups.

Drinking fountains.

Drainage, Sanitary Appliances, and Fittings.

Lavatories.	Baths.
Water closets.	Cloak room fittings.
Urinals.	

Warming, Lighting, and Ventilating.

Stoves.	Glazing, including prismatic glass
Open fireplaces.	pavement lights and reflectors.
Ventilating stoves and fireplaces.	Lighting by oil, gas and electricity.
Furnaces.	Screens and blinds.
Radiators, and hot-water pipes.	Ventilating appliances and fans.
Windows and fittings.	

Decoration.

Distemper.	Materials for dadoes.
Paints and colourings.	Metallic coverings.
Wall tilings.	Enamels.

Dietaries.**Clothing.**

Materials.	Boots, shoes and sandals.
Patterns.	

Furnishing and Equipment.

Movable partitions.	Dustless chalk.
Library fittings.	Telephones, speaking tubes and bells.
Desks and seats.	Fire prevention and appliances.
Blackboards, easels, map-stands, etc.	First Aid and hand ambulance ap- pliances.

Teaching and Technical Appliances.

Fittings for Science teaching.	Hygiene teaching and demonstrating appliances.
Horticultural and gardening ap- pliances.	Publications and books, illustrating suitable types and arrangements, diagrams, maps.
Fittings for cookery, laundry and dressmaking classes.	
Fittings for kindergarten work.	

Physical Culture.

Physical drill and gymnastic apparatus.
Ophthalmic and Orthopædic appliances.

Playgrounds.

Paving.	Games and sports.
Play sheds.	Fencing.

Silver and Bronze Medals will be awarded at the discretion of the judges, and their decisions will in all cases be final. A Classified List of all Awards is published by the Institute.

Loan Collection. The Committee will be pleased to consider offers of any Drawings or Photographs of Schools and Apparatus, also Specimens or any Special Exhibits likely to be of interest to the delegates and others, and those accepted will be exhibited free of charge as far as the space available for this purpose will allow. In regard to Exhibits thus sent on loan, the Committee will, if desired, undertake to unpack, display, and repack all such Exhibits free of cost, but while all reasonable care will be taken with the drawings and photographs, the Committee cannot hold themselves responsible for any loss or damage to them during the period of the Exhibition or in transit.

The Exhibition was open till Wednesday, August 14th.

(For list of Awards made at the Exhibition, see page 158.)

SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

LONDON, AUGUST 5TH to 10TH, 1907.

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**SET SUBJECTS FOR DISCUSSION AT FOUR
GENERAL MEETINGS, to be held on Tuesday,
Wednesday, Thursday, and Friday, at 12 o'clock noon.**

1. Methods for the first and subsequent Medical Examinations of School Children.
Méthodes pour l'examen médical des écoliers au début et au cours de leurs classes.
Methode der ersten und der folgenden ärztlichen Untersuchungen von Schulkindern.
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DR. HEINRICH KOKALL, Stadtphysikus-Stellvertreter in Brünn.
2. School Work in its relation to—
 - (a) The duration of the lessons.
 - (b) The sequence of the subjects.
 - (c) The season of the year.Le travail scolaire considéré au point de vue de :
 - (a) La durée des classes.
 - (b) La répartition des enseignements.
 - (c) La saison de l'année.Schulunterricht in Hinsicht auf :
 - (a) Die Dauer der Stunden.
 - (b) Die Reihenfolge der Lehrgegenstände.
 - (c) Die Jahreszeit.DR. WILLIAM HENRY BURNHAM, Professor of Pedagogics, Clark University, Worcester, Mass., U.S.A.
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DR. LEO BURGERSTEIN, k.k. Professor, Privatdozent an der Universität, Vienna.
3. The School and its relation to Tuberculosis.
L'école et la tuberculose.
Schule und Tuberkulose.
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4. The Lighting and Ventilation of Class-rooms.
Eclairage et ventilation des locaux scolaires.
Beleuchtung und Lüftung der Klassenzimmer.
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				1,330	8	1
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„ Sale of Dinner Tickets ...				110	12	0
„ Ladies Committee Account—						
Donations ...			339 5 6			
<i>Less</i> net Expenses of Garden Party			278 18 4			
			60 7 2			
<i>Less</i> Sundry Expenses ..			15 0 0			
„ Sale of Congress Proceedings ...				45	7	2
				34	9	0
				<u>£3,280</u>	<u>5</u>	<u>8</u>
To Balance brought down ...				1,028	18	11
				<u>£1,028</u>	<u>18</u>	<u>11</u>

August 19th, 1908.

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„ Press Agents ...	384	18	6
„ Badges... ..	47	4	11
„ Bank Charges ...	96	11	7
„ Incidentals—	0	16	7
<i>Less</i> Sundry Receipts ...			
	38	17	11
1908. August 14th.	<u>2,251</u>	<u>6</u>	<u>9</u>
By <i>Balance carried down—</i>			
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Pulman & Sons, Ltd., for Printing, etc. (estimated)	40	0	0
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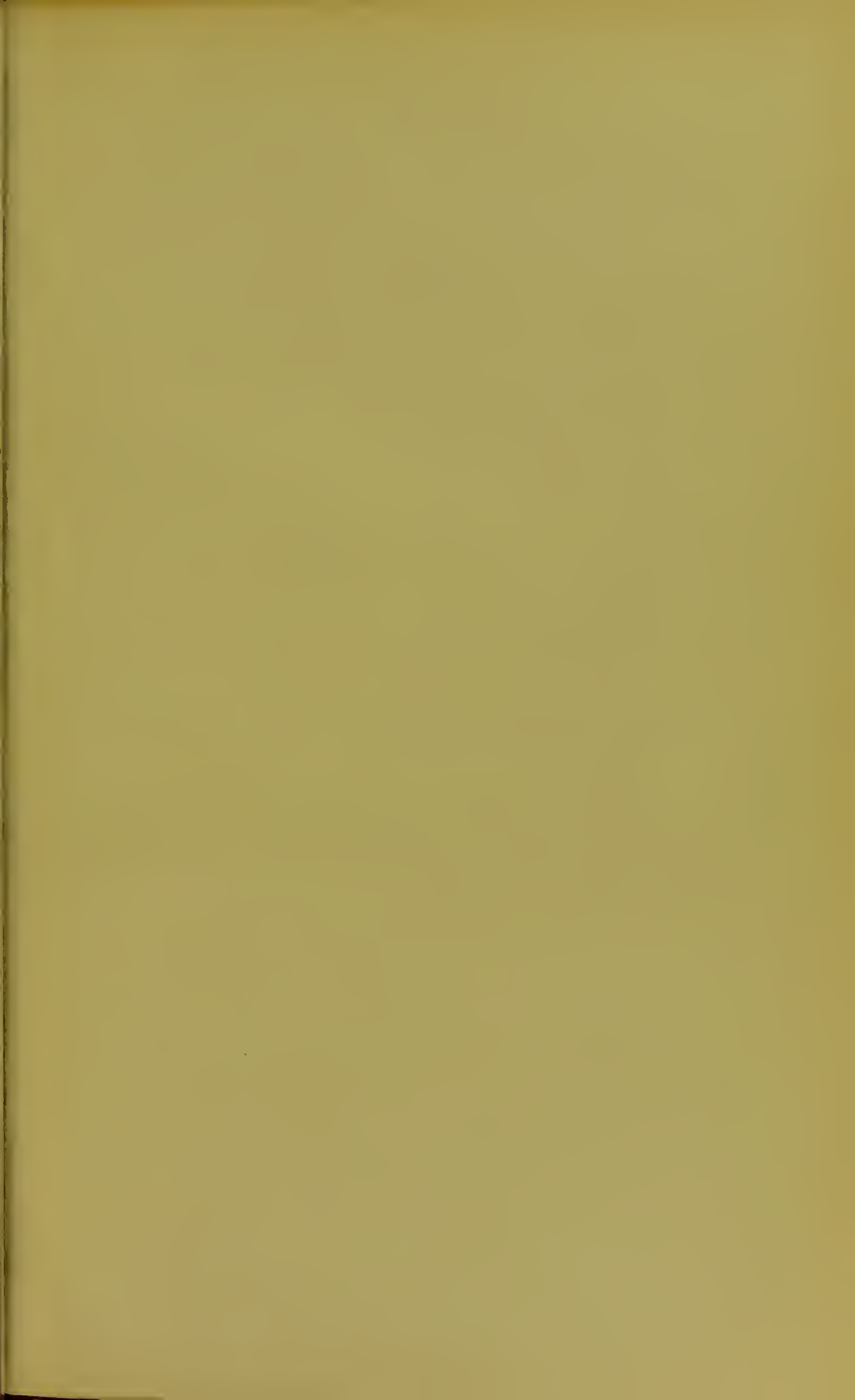
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